

Audubon

JULY-AUGUST 1957

Magazine

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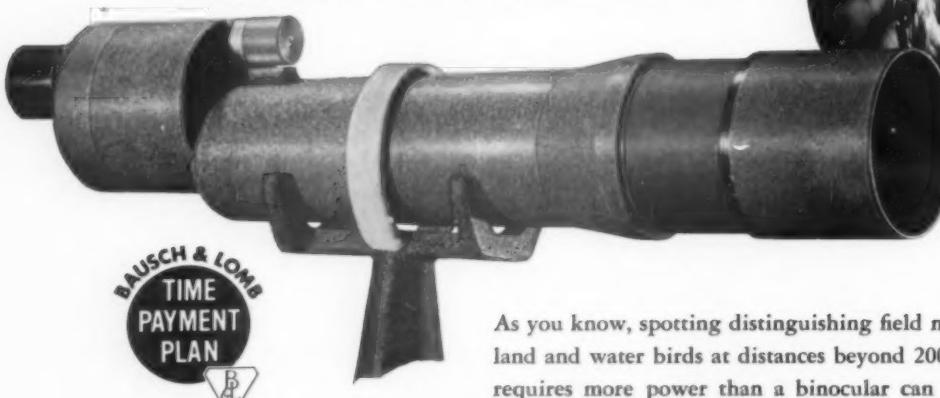


COTTONTAILS IN MY GARDEN p. 158



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Audubon magazine

Volume 59, Number 4, Formerly BIRD-LORE

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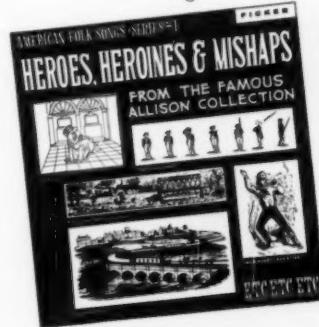
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Letters

Billboards and Other Problems

I want to express my enthusiasm for Roger Peterson's discussion of our billboard problem in the March-April 1957 issue of *Audubon Magazine*. Our modern industry has developed with an enthusiasm that overlooks the growing sensitiveness of people. The time will come when people will resent the empty, pretty words in modern advertising, and especially when they are kept captive in places like modern highways.

Just recently has come an appeal for help from the Michigan United Conservation Clubs. The wholesome community at Port Sheldon is about to be overwhelmed with an electrical establishment and the ashes of millions of tons of coal. We have the same problem throughout our country, where devotees of a single rigid line of thought want to put beautiful country under water. All of this, laying waste our country, is done in the name of progress.

The billboard problem is especially dangerous because it is so insidious that it may confuse those of us who are the least bit unwary. We are called names meant to be most derogatory, such as "crusading conservationists" and "those bird watchers." But I am sure the time will come when it will be more generally understood that watching birds is a sign of progress in human affairs.

OLAUS J. MURIE

Director
The Wilderness Society
Moose, Wyoming

Territorial Behavior of a Towhee

Len Howard, in her book, "Birds as Individuals," describes an English blackbird carrying leaves in its bill as a threat device in a territorial dispute. On March 22, in the Georgia Piedmont region, I saw a male eastern towhee doing this. There was no doubt that a territorial dispute was involved; this behavior is a regular feature of early spring, and it is easy to watch in this species. The bird did not retain the leaf in its bill long, but dropped it, and flew at the "intruding" male, which fled.

CHARLES HARTSHORNE

Department of Philosophy
Emory University
Emory University, Georgia

Comment

Dr. Hartshorne has described an action which is known to specialists in

the study of animal behavior as a "displacement activity." Apparently birds that are emotionally disturbed over a situation confronting them—a situation which causes the bird to be torn between two "drives," or desires—will often perform an act that seems irrelevant to the situation. However, the act (in this example, the towhee picking up a leaf), may be recognized as a "threat" by the other bird, and it will be driven away.—The Editor

Painted Buntings

The item about the painted buntings at Fort Pierce, Florida, in the January-February 1957 issue of *Audubon Magazine* (p. 32) was very interesting.

I have several of these beautiful little birds around my feeding stations; they have been here since early December, 1956.

On my back porch, about a yard from my door, I have a feeder which I usually keep exclusively for the cardinals, putting only sunflower seeds in it. Since the arrival of the painted buntings I am putting parakeet seed and mixed wild bird seed in this feeder and the buntings have become tame enough to use it, sometimes right along with the cardinals. Ordinarily the cardinals fight any other birds that land on this particular feeder, but they seem very will-

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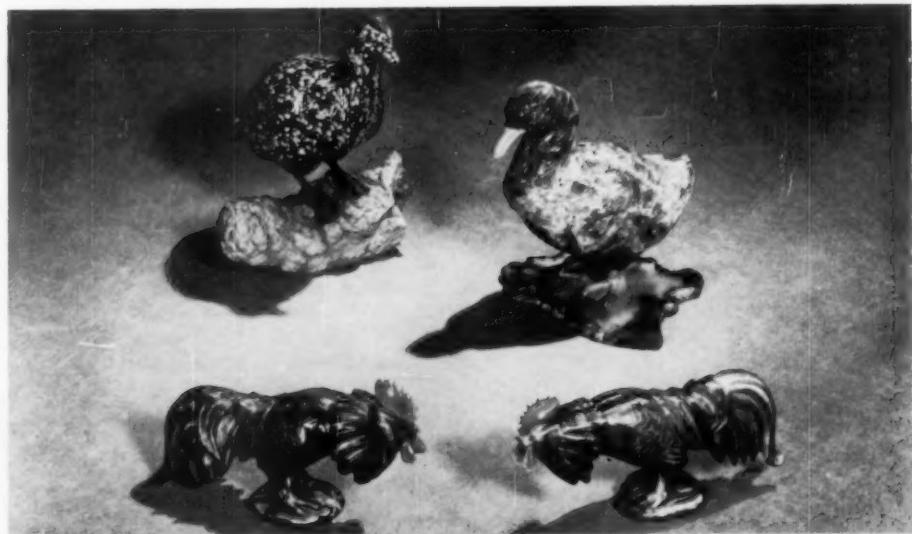
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ing to share the feed with the painted buntings.

As I recall from other years, the buntings stay here until early April.

ANNABEL EBRIGHT

Miami, Florida

Aspergillus, or "brooder pneumonia"); how it infects birds at feeders, and how to prevent it, see "Letters," *Audubon Magazine*, January-February 1956, pp. 2-4, and the May-June 1956 issue, p. 98. —The Editor

Comfort to a Shut-in

As a shut-in, I am no longer able to observe birds as I used to, so *Audubon Magazine* brings me much that is of interest in the bird world, and I certainly would not want to miss an issue.

ALICE HABERBERG
St. Paul 4, Minnesota

A Friend of the Key Deer

I've received many letters from members of the National Audubon Society throughout the United States, who read the articles you wrote in *Audubon Magazine* about the Key deer herd that needed help. Thanks for all of your help to bring the little animals' problem to their attention.

I'd like to thank all the members, too, for taking time to write to Congress and to me.

It looks like the historical and rare Key deer will finally be left to survive and roam on the same land that Columbus saw them on so many years ago.

Sincerely your friend in conservation.
GLEN TRYON ALLEN
Miami, Florida

Comment

Many of our readers will remember 16-year-old (now 17-year-old) Glen T. Allen, an Eagle Scout of Miami, Florida, an account of whom we published in "Nature in the News," *Audubon Magazine*, p. 227, September-October 1956 issue. Glen has worked hard to arouse public interest to establish a permanent refuge for the Key deer, and, as of this writing, it looked as though Congress would pass the Key Deer Refuge bill. If the bill passes, we shall not only establish the future of the Key deer, but will have had an example of what youthful courage, sympathy for wildlife, and high ideals, can help us accomplish.—The Editor.

Likes Teale Article

I am enclosing a letter addressed to Mr. Edwin Way Teale concerning his article entitled, "Land Forever Wild," which appeared in the May-June 1957 issue of the *Audubon Magazine*. Since I do not have his address, will you be kind enough to send this letter to him as, in my opinion, it is the best article ever written on the subject of the preservation of wild areas.

EDWIN T. GOODRIDGE
Princeton, New Jersey

Continued on Page 185

For information about *Aspergillus fumigatus* infection (sometimes called

Questions for Self-Appointed Conservationists

By Ernest Swift*

WHAT is conservation? What are natural resources? What is resources management? There is no hard and fast point of beginning, no common denominator.

Attendant to any terminology having to do with our natural resources—soil, water, minerals, timber, and wildlife—it can be said with considerable factual proof that there has been a staggering amount of mismanagement, inexcusable waste, and general manhandling of those resources. I say this in spite of any testimonials that may be forthcoming to the contrary.

Several thousands of years ago a man named Solomon, reputed to have profound wisdom, built a temple to exalt his ego. To accomplish this he cut down the cedar forests of Lebanon, and in so doing, set in motion the processes of land erosion that have cursed that land up to the present day. Much of the land has been washed away to bedrock. Multitudes suffer long after the seekers of glory, pomp, and power have returned to dust.

The entire philosophy of protecting and using resources falls within the realm of values which people as individuals are willing to place on them; and no two individuals use the same measuring stick. What one man values another disdains. In weighing values some would forego paved roads, TV, and bathtubs to preserve wilderness and wetlands for ducks. Others would make no sacrifices to preserve the primitive elements of the universe. A vast majority are stupid enough to think they can have both. This last element of mankind poses the greatest danger to preserving the last segments of native America. He wants wilderness but also wants access roads. He wants duck hunting but is willing to be bribed by agricultural subsidies to drain his marshland and exterminate the duck.

WHO IS A CONSERVATION-

* Mr. Swift is Executive Director, National Wildlife Federation, Washington, D. C. His editorial appeared originally in *Conservation News* (official publication of the National Wildlife Federation), issue of March 1, 1957, and is reprinted herein with Mr. Swift's permission.—The Editor

IST? Is he the dickey-bird lover—or the plain farmer who does a conscientious job of erosion control? Is he the man who finds spiritual fulfillment on a wilderness canoe stream—or is he the man who would harness the stream for kilowatt hours, and maintain his act is the conservation of hitherto wasted power? Is he the man who finds delight in fishing a crystal clear lake—or the man who runs his industrial waste into the lake and proclaims his humanity to man because he furnishes work and therefore security for mankind?

Is he the practical barbershop biologist who scoffs at all "the scientific stuff" about land ecology, but who would not give up his electric razor for a clear-running stream? Is he the bureaucrat with the billion dollar ambition, who stands before a congressional committee and pompously informs them that reclaiming western desert at \$3,000 an acre is a

Continued on Next Page

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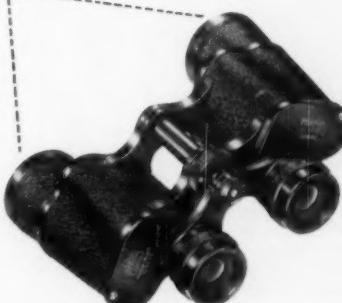
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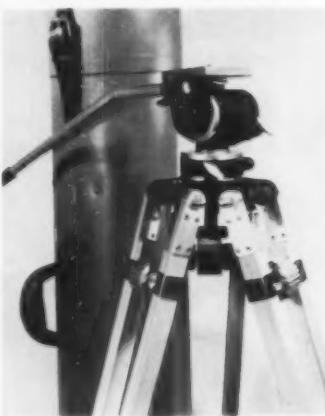
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By and large he is intelligent. He is well educated by world standards. His sin is not ignorance; it is worse. It is indifference.

There is developing, however, a broadening concept. As the tempo of utilization compounds at an accelerating speed, the battle lines are more sharply drawn. As populations increase, living space decreases and leads to frustration. The halls of Congress resound in debate as to who will prosper from the fruits of the earth. Putting it simply, who will get what through the power of political force?

What constitutes the fulcrum that balances the exigencies of man's survival? Down through the millennium, civilization's elusive goal has been to evolve a pattern of ethics, but, though set forth in the Ten Commandments and the Sermon on the Mount, the stark simplicity of right and wrong is still unpalatable. Yet through thousands of years and the travail of broken hopes, corrupt governments, fanatic ideologies, and abused lands, mankind has advanced only to dissipate his advance and fall back into decay and sometimes degradation.

The American Revolution was the beginning of one more venture in self-government. The Constitution with its Bill of Rights set forth man's

inalienable right to a government of his own choosing.

But for all this struggle for human achievement, as yet man has not reached a point of ethical behavior in the husbandry of natural resources. Because resources are property, it is assumed they require no ethical evaluation.

Those who have envisioned the earth's resources as the raw stuff from which a lasting civilization may be forged are few indeed. Life is a mosaic of such minute pieces that few comprehend it in their elemental struggle to survive. Labor unions and management wage herculean struggle over fringe benefits, a yearly guaranteed wage, hours of work, but give no whit of thought to the materials that are needed to sustain the mills. Though the elements of the earth are their life blood, they know it not.

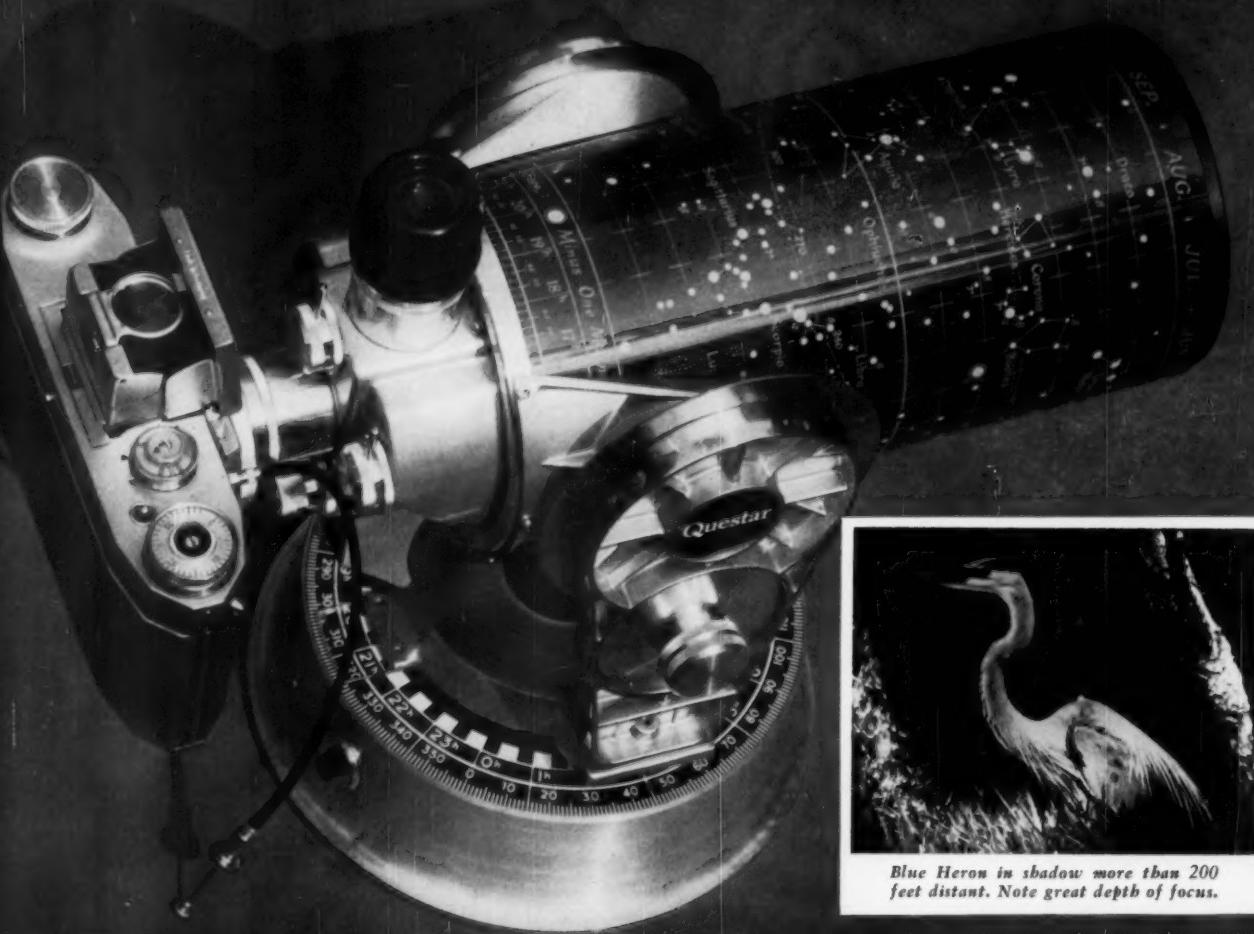
Congressmen preen their feathers when government-subsidized welfare is mentioned, but never ponder as to how much soil erosion is being stopped by a social security number. Minimum wages never put out a forest fire, and unemployment compensation does not clean the sludge out of the river.

Our structure of government, our social philosophies, and the husbandry of our national resources are one and inseparable. They are elements basic to the perpetuity of an enlightened civilization. They must be geared to a common purpose, keeping in mind that a nation is only as strong as the individuals of which it is composed. If the individuals are strong, then, surely, they represent a selective group. If America is to survive, mediocrity is not good enough. Today's attitude toward life does not emphasize this credo. Our present welfare state does not exact sufficiently severe penalties for mistakes and lack of vigilance. We are no longer selective.

We not only tolerate mediocrity; we allow thousands to capitalize on it. Certainly the industrial monstrosities which have been developed are not the entire answer, as they too closely typify the pagan god best known in American parlance as "The Fast Buck" which is worshipped today instead of the Trinity in the American household.

The issue is simple: HAS AMERICA THE WILL TO SURVIVE AND ENDURE?

—THE END



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We guarantee that with any Questar you can read this page at 300 feet with 80 power. This test can serve you as a simple measure of performance. We made it outdoors December 12, 1956, a dark, rainy day. Weston meter read only 300 on brightest part of sky.

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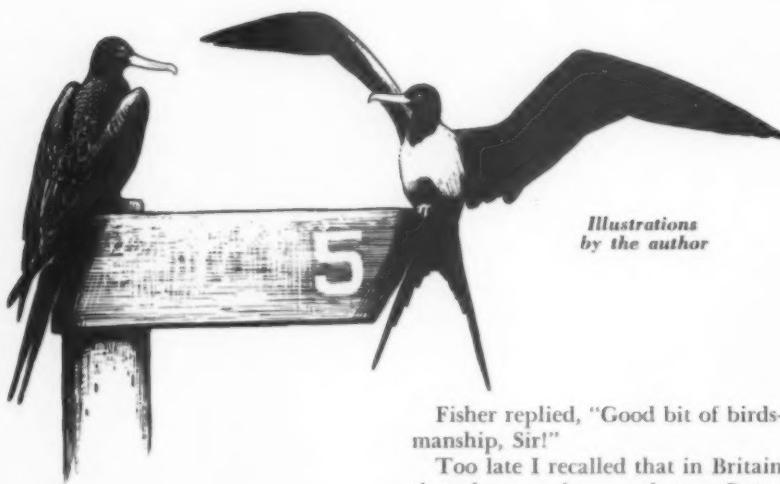
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"Birdsmanship"

The British humorist, Stephen Potter, is the chief protagonist of an art at which many Englishmen seem peculiarly adept—"Intimidation by Conversation." Potter's first book, "Gamesmanship," subtitled "The Art of Winning Games without Actually Cheating" tells you how to throw your partner off his game. His second work, "Lifemanship," lays down the various methods by which the full-blown ignoramus can take the field successfully against highly-placed experts in travel, art, literature, typography, and military affairs. It was inevitable that "Birdsmanship" should be developed.

One practitioner whom I will not name, rapidly rose to the vice-presidency of his local natural history society by employing this subtle form of bluff. But you cannot outplay the real pundits for long. I remember, on one of my trips to England, of being accused of this borderline practice. James Fisher and I were driving to Scotland when we saw, perched against the sky, a hawk. Jamming on the brakes, we brought binoculars to bear on the silhouette. Now, in America, we usually yell out "Buteo," "Falcon," or "Accipiter," narrowing the bird down to its group, and then we pronounce it a red-tail, red-shoulder, or what-not. In this instance, I quickly announced, "It's a buteo."

Fisher replied, "Good bit of birdsmanship, Sir!"

Too late I recalled that in Britain they have only one buteo—*Buteo buteo*, the common buzzard. I should simply have called it a buzzard in the first place.

Although Stephen Potter himself is a good birdsmen and has written on this theme in "One-upmanship," my favorite version is the one which Bruce Campbell published in *Bird Notes*, the publication of the Royal Society for the Protection of Birds (England's counterpart of the N.A.S.). Realizing how much the Audubon audience would enjoy this dissertation I intended to present it here, only to find that Joseph Hickey had already given it at the annual meeting of the Wisconsin Society for Ornithology and planned to reprint

it in the *Passenger Pigeon*,* official publication of the W.S.O. Inasmuch as there is not a great overlap in the two audiences, I decided to go ahead regardless. With the author's kind permission and that of the Royal Society for the Protection of Birds, I hereby present the official version, translated from the original Olde English and adapted for a U.S. audience by J. J. Hickey and further amended by myself.

"BIRDSMANSHIP"

by Bruce Campbell

(With acknowledgment to the Master Potter)

An interest in birds is today almost "de riguer" in the more cultured parts of the United States, and the success of S. Potter's courses in Lifemanship and Gamesmanship have led me to try to put together for the benefit of my fellow bird-watchers (hereafter: birdsmen) some hints which they may find of use when attempting to establish their dominance in the ornithological pecking order, in the field, in the meeting-room and (where we shall begin) in the hurly-burly of a social gathering.

I The Birdsman in Society

One of three questions is inevitably asked of the birdsman following

* Published quarterly by the Wisconsin Society for Ornithology, 1921 Kendall Avenue, Madison 5, Wisconsin. Membership dues of \$2.00 a year includes the *Passenger Pigeon*.—The Editor



the stock introduction by his hostess: "Oh, Mabel, I do want you to meet Mr. Er; he's a great authority on birds."

(a) "Oh, how interesting, do tell me, is this a good place for birds?"

Provided the questioner is not outstandingly pretty, and it is not desired to prolong the conversation for other reasons, the correct answer here is a flat "No place is bad for birds, you know." Unless Mabel is a real trier, there will be no comeback to this, and an escape can quickly be made.

(b) "Oh, how interesting, do tell me, do you know Arthur Allen?" Answer: "Well, I saw him in Washington the other day." This is what is called paying the truth the homage of equivocation, since it does not stress the fact that Dr. Allen was in Washington, D.C., lecturing before the National Geographic Society and that you, with 3,000 other people, saw him on the platform at Constitution Hall.

From this it should be easy to lead on to an account of your own observations on birds which should play out time successfully.

(c) "Oh, how interesting, do let me tell you about my robin!" This is superficially the easiest of the three to meet, since it initially requires from you only a listening role, but as the inevitable anecdote (the bird is sometimes a starling, occasionally a house sparrow, and it always does one of three things: taps on the window, builds two nests on top of each other, or seems really to recognize her) winds to its end, you realize that some fitting comment is needed.

By far the best is: "Most interesting: of course, there's something just like it in the Dutch literature." The beauty of this is that your questioner probably does not know the specialized meaning of "literature," and will credit you with uncanny omniscience; in any case, the chances are 25,000 to 1 that she has never seen the quarterly magazine *Bird-banding* which regularly abstracts Dutch papers about birds.

II The Birdsman in the Field

But birdsmanship is not all social cut and thrust; sooner or later the birdsman must come into the open and show his mettle, probably at a field outing of his local society. Here the preliminary build-up is of great

importance, so we will consider first:

(a) *Equipment*: It is essential that the successful birdsman should be the worst-dressed man in the party. The remains of (preferably) an ancient hunting coat and fisherman's trousers form an admirable base, on which should be superimposed as many bits of leather as possible. The more unusual their location, e.g., the small of the back, the seat of the trousers, the more deadly their effect; and the whole should be topped by a skiing cap on which birds have paid numerous tributes (a couple of nights in a chicken house should do the trick). The birdsman should sport an enormous

Continued on Page 190

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Summer IN A PRAIRIE MARSH*

By Paul L. Errington

NO ONE view could typify a marsh of eastern South Dakota at its life-rich, summer best. One view should be of a misty morning with sunlight filtering through, and avocets, willets, and lesser shorebirds running along a mud flat, feeding, raising their wings (the willets showing their white bars), and calling. On mud or on sand bars or on floating posts or on muskrat lodges, the terns guard their territories. Over all is the medley of blackbird calls, of coot and rail and grebe calls, and the pumping of bitterns. In the right places, the booming of prairie chickens is a part of the morning sounds of early summer.

Ducks are much in the marsh. Territory-holders sit along the shore or on prominences out in the marsh, sometimes both members of the

pair, sometimes the males alone. Here, nesting in the Dakotas, are many of the ducks that were spring migrants through Iowa. On shore are the mallards and pintails, the baldpates, shoveler, gadwalls, green-winged teals, and especially the blue-winged teal—bluewings everywhere, the males with white crescents on the sides of their heads. Deeper in the marsh are mallards and some other "puddle-ducks" sitting on muskrat lodges. The divers are there, too. They swim or loaf amid the bulrush islands or sit in the open. There are the contrasting colors of the male divers—the red-heads and canvas-backs—looking as striking as during migration, the ruddies as artificially painted.

The nesting sites of the ducks vary greatly. Most puddle ducks place their nests not in the marsh but in surrounding vegetation, in suitable growths of sedge or cord-

grass, or on pastured hillsides or in hayfields. The adaptable mallards nest on the tops of haystacks, along the marsh edges, and out in the marsh on muskrat lodges. Pintails may nest on the uplands a couple of miles away from a marsh, then lead their broods overland to the water. The real diving ducks usually build their nests in rush clumps, though ring-necked ducks may put them on muskrat lodges or near water's edge along the shore.

Many ducks, in addition to their normal nesting, lay eggs in the nests of other species of ducks. All of our ducks probably do this to some extent (as well as laying in nests of like-sized birds, other than ducks), but the red-headed and the ruddy ducks engage in such "parasitism" almost habitually. I am not sure how well this works out for the "parasitizing" species, though an odd duckling may be seen, apparently getting along, in the brood of another species. Of course, it does not always follow that the odd duckling hatched with the others, for, after hatching, considerable splitting up and recombination of broods may take place, this becoming more and more conspicuous late in the rearing season.

By midsummer, the greenery of the sedges, bulrushes, cattails, and reeds conceals much of the animal life of a marsh, but, when there is so much life that the marsh seems almost to boil over, one is not likely to think about what remains hidden. Up ahead in an open space, one sees a brood of blue-winged teal (or of almost any other duck that rears young there) swimming or flapping for the shelter of the rushes as one approaches in a canoe. A brood of ruddy ducks may submerge with their mother, or a few tiny pied-billed grebe chicks may leave a hatching clutch of eggs to dive and come up a few feet away—or perhaps to become entangled in sub-



"The marsh edge may be said to belong to the mink as much as to any single form of animal life." Photograph by Maslowski and Goodpaster.

* This is a condensed version of a chapter from a forthcoming book, "Of Men and Marshes," by Dr. Errington, to be published by the Macmillan Company, New York City, in September 1957. Permission to print the chapter in advance of publication of the book has been granted by the author and the publisher.—The Editor



"No one view could typify a marsh at its life-rich summer best." Photograph by John H. Gerard.

"Muskrats may be among the mink's most conspicuous victims." Photograph by Leonard Lee Rue, III.



merged vegetation. There are young terns, swimming with their bodies low in the water, while the adults frantically hover over them and swoop at intruders. There are weaned young muskrats that sit, eat, and swim about a lodge or a rush-raft. Heavy-ended fledgling blackbirds attempt their first flights from one reed clump to another, losing altitude as they fly, and finally they clamber among the canes by means of their strong feet.

Low over the marsh, the self-hunting young marsh hawks quarter back and forth, dipping down and rising up to make passes at other young creatures. These hawks in their buffy juvenile plumage can be so monotonously *unsuccessful* in their attacks that one wonders how they stay alive long enough to learn to hunt. Usually they make out with what they can mooch from the older hawks, or with what they find dead, or with the unwary or sluggish or weak mammals and birds that fall victim now and then, or with the grasshoppers and crickets and small snakes that they catch away from the marsh itself. Even so, amid an abundance of prospective prey, they work for a living.

About the Author

Dr. Errington, a professor at Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa, has had a long and successful career as a research zoologist and teacher. He is an authority on the ecology of wild gallinaceous birds, waterfowl, and furbearers; predation and its effects; and population cycles in wild animals. Many of our readers will remember his previous articles in *Audubon Magazine*—"A Closer Look at the Killers," January-February 1953; "The Big Boss of the Woods," May-June 1954; and "Our Little Wild Dogs—the Foxes," January-February 1955.

Dr. Errington's forthcoming book, "Of Men and Marshes," to be published by the Macmillan Company in September 1957, is a book of outdoor experiences and philosophy, written by a man who has spent much of his life in the fresh-water marshes of North America. It includes his belief that the ancient interrelationships of native plants and animals, soils, and climates, are of themselves worthy of a certain reverence. The book will be illustrated with 28 line drawings by Al Hochbaum.

—The Editor



"Ducks are much in the marsh." Photograph of female blue-winged teal by Allan D. Cruickshank.

"The muskrat lodges taken over by the minks had a tousled appearance." Photograph by John H. Gerard.



In my notes of years ago is an account of a young marsh hawk that I took which was the lone survivor from a mowed-over nest. After a month and a half of rearing it on a diet of ground squirrels and blackbirds, it was, in early August, given a stuffing of blackbird meat, banded, and released near a marsh-edge shack. Six days later, I saw a young marsh hawk hunting over a meadow a half mile from the shack. The bird came near and alighted in a tree, the band on its leg showing plainly. It was hungry. I ran back to the shack for a gun, shot a few blackbirds, and then ran with the blackbirds back to the marsh hawk. When I was within about 60 yards of the hawk—which was sitting where I left it—it flew toward me, and I threw it a blackbird, which it carried off to the meadow to eat. The next day I went looking for my hawk and found it still in the neighborhood; it flew to me, caught the blackbird I tossed in the air, and went away once more.

For hawks that get plenty to eat, the moisture content of their food may suffice in the hottest of mid-west weather, but the long fasts of self-hunting young necessitate a certain amount of drinking. One hot day, I sat down to rest in the shade of a willow beside the water,

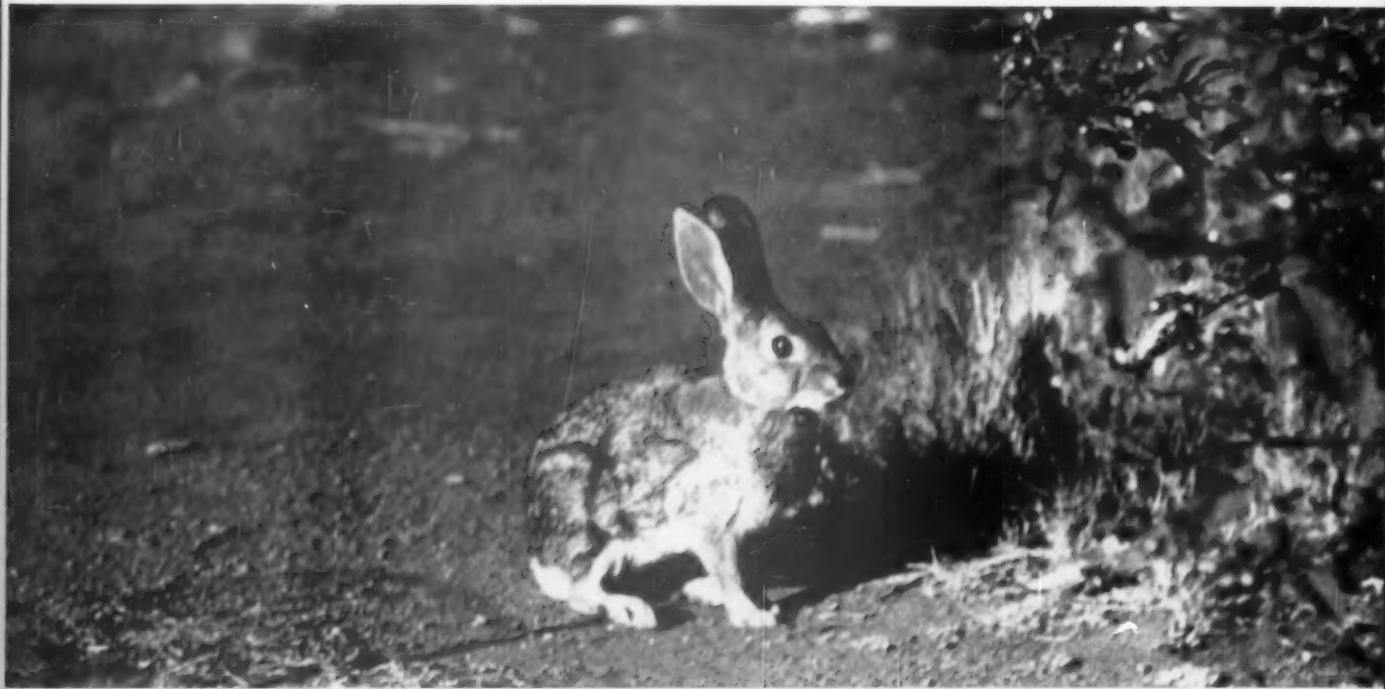
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"Here, nesting in the Dakotas, are many of the ducks that were spring migrants through Iowa." Photograph of male blue-winged teal by Allan D. Cruickshank.

"Raccoons may be very thorough in their searching." Photograph by Allan D. Cruickshank.





Photograph by the author.

COTTON TAILS

By Frank F. Gander

ONE August morning as I walked out into my California garden, the talkative tones of a covey of quail sounded from the shrubbery. The birds were moving toward the spot where they knew I would be spreading food for them. A fence lizard near the path took from my hand a mealworm which I offered it, and as I came near the lath-house, I met a friendly cottontail. This rabbit was almost grown and had been living in my garden since it first came in as a tiny, fluffy baby, so it was accustomed to me and did not fear me. I stopped to watch it for a few moments, and saw that it was feeding on the plants of the area, eating a little of first one and then another. In a short time, within my nursery, it had sampled plants from every continent.

After the cottontail had satisfied its appetite, it started to hop past me along the path which at this point was less than two feet wide. For just a second it hesitated about coming so close, but came on, turned its head and sniffed at the cuff of

my trousers as it passed, and then hopped out of the shadow of the lath-house into the full sunlight. Apparently this was too warm for comfort for the rabbit soon turned around and came back past me along the path. Just in front of me and not six feet away, it stretched out full length on a patch of baby's-tears (*Helxine*), which grow in a moist, shaded place. It nibbled a few leaves from the plant, then grew drowsy, and with half-closed eyes soon seemed to be sleeping.

As this rabbit dozed so trustingly before me, I thought of other cottontails whose lives had touched mine down through the years. How different had been our relationship from this present friendly one! The first cottontails I can remember were those I used to see along the country roads near Wichita, Kansas, when I was a small boy and my father used to hitch the horse to the buggy and take the family out for a drive on summer evenings. It was at Wichita, too, that I first saw a rabbit shot, and by the time I was 12 years old I had joined an older brother in coursing rabbits with greyhounds.

The quail in my garden broke into my train of memories with their impatient calling, but the rabbit in front of me dozed on so I continued to watch it. Thinking over the various experiences with cottontails in the past, I realized that I had probably hunted them more in California than in all the other states together for here I have spent over half my life. Some shooting had been done to get specimens to be preserved for scientific study in a museum and some, too, to protect my garden.

Whether or not my thoughts about hunting rabbits were sensed by the little creature in front of me, it would be impossible to determine, but something caused it to get up, yawn and stretch, and move on. What a pleasure it had been to watch it and to watch the various other activities of rabbits in my garden! How glad I felt that I was no longer at war with them but had learned to watch them with friendliness instead of running for a gun every time I saw one.

Many things I have learned about cottontails, too, by watching the ones



Photograph by the author.

IN MY GARDEN

in my garden, I have learned that they are great samplers and seldom eat much at a time from any one plant but move about, eating a little here and a little there. Much of what they take is waste material—grasses, pimpernel, oxalis, and similar weeds, and also the fallen blossoms of many plants including the native white sage as well as many exotic species. Sometimes they do not wait for the flowers to fall but eat them off the plant. I have watched them eating California poppies, horned poppies, Chinese balloon flowers, and hibiscus blossoms in this way. In addition, they eat some seeds, taking these off the plant or picking them up off the ground. They seem to be especially fond of the seeds of the annual wildflower called "golden girls" (*Chaenactis*), and also eat the seed heads of some grasses.

Of course, sometimes they annoy me greatly by eating plants that I treasure, but I have learned to protect all young plants with cages of wire netting of one-inch mesh, until the plants are large enough to withstand the depredations of rabbits.

Plants that never get that large must be protected continuously or must be kinds which rabbits do not like. Yet, I would not banish rabbits from my garden, for this garden is a naturalistic one and needs the activities of birds, rabbits, and other small creatures to complete it. Cottontails seem to belong there.

Cottontails, I believe, would make themselves at home in anyone's garden for they live throughout the length and breadth of our land. When driving in the evening or early morning, one can seldom travel many miles in rural areas without seeing cottontails along the roadside, for this is the most widespread kind of wild rabbit in the United States. However, there are others. In brushy areas of the Far West can be found a very close relative, the brush rabbit, and in swamps and marshes of the southeastern states lives the swamp rabbit and marsh rabbit. The tiny pygmy rabbit lives only in a very small area, principally in Idaho. The jack-rabbits of the prairie country west of the Mississippi River, and the snowshoe rabbits of the high mountains and northern states

are hares, and differ from rabbits in several ways.

With jack-rabbits and other hares, the young are born well covered with hair, and with their eyes open. They are able to hop about from the first. With cottontails and their close allies, however, the young are blind at birth and practically naked so that the mother prepares an excellent nest for them. Cottontail nests that I have seen in Kansas, Texas, and California were quite alike—each was a small bowl-like depression in the earth, lined with dry grasses or leaves, and this in turn lined with fur which the mother cottontail had pulled from her belly. When the mother is away from the nest, she leaves the young covered with a blanket of this same fur, and over this may spread dry grass or leaves. This last layer brings the top of the nest level with the surrounding ground so that it is well concealed.

In Kansas, late in the summer of 1921, I surprised a mother cottontail nursing her young in such a nest in a weed patch. She had pushed the covering blanket to one



Seven young cottontail rabbits almost old enough to leave the nest.

Photograph by Lynwood Chace.

side and was sitting over the brood of young while they reached up and nursed. Startled by my approach, she disengaged herself from the young, hopped from over them, turned back and made a quick pass at the fur- and grass-blanket to pull it over the nest; then fled in terror. So frightened and rattled was she that she ran into a poultry wire fence. Before she could get her wits about her and escape, I grabbed her, and to my surprise, found she was a young female not yet fully grown. The condition of her nipples verified that she definitely had been nursing babies, and thus I first learned that a young doe cottontail might produce offspring in the same year that she herself had been born.

The nest which I saw in Texas was found by dogs, but they had not disturbed it when a group of us caught up with them. It was much like the Kansas nest, except that since it was in a wooded area, leaves formed the top covering instead of grass. This mother rabbit was chased by the dogs and ran up the sloping trunk of a large liveoak and hid in a hollow limb. The dogs followed her up the trunk but could not get to her in the hollow in which she had hidden herself.

Two nests in California I found were on grassy hillsides and almost identical with the Kansas nest in ap-

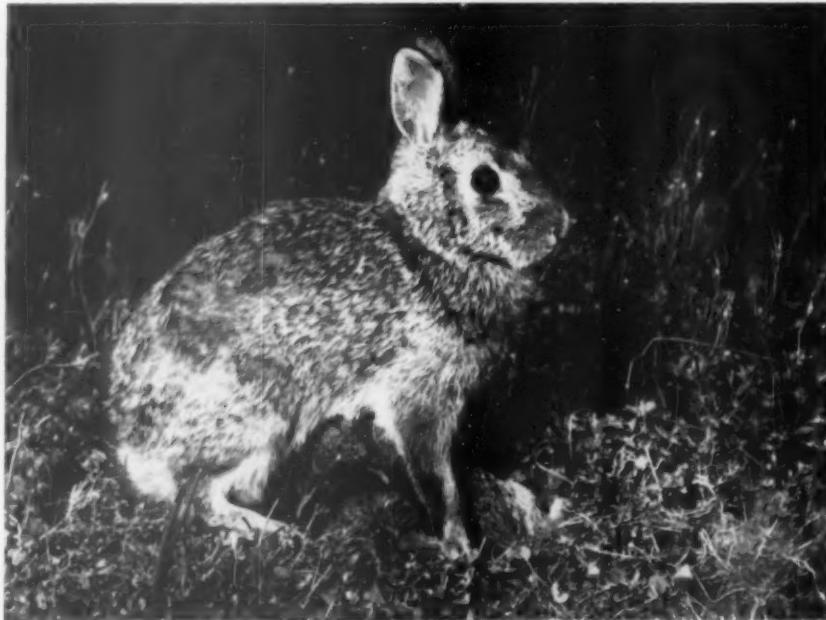
pearance. I found one as a house cat was raiding it, and the other I discovered only because it had first been found by a large gopher snake (*Pituophis*), which was making a meal of the young rabbits. One other time I saw a gopher snake catch a young cottontail. In the chaparral one spring, I jumped a little rabbit

that was still in the fluffy baby stage. It scuttled across a small clearing, and as it came to the bushes on the opposite side, a gopher snake seized it and quickly wrapped himself about it to kill it.

Snakes of many kinds are known to eat cottontails which also are preyed upon by many other animals. Hawks, eagles, and owls catch rabbits of all sizes, and in the Southwest, the roadrunner occasionally catches very young rabbits. All predatory mammals from the weasel to the wolf and lynx feed on rabbits extensively. Opossums and skunks also eat some broods.

It is when the young cottontails first leave the protection of the nest that they seem to be most vulnerable to attack. They scatter then—each fluffy baby frequenting its own small area. The mother keeps track of each one for a time and visits them to let them nurse. One spring I was out in a wild area when I heard a low sound which I did not recognize. Carefully peeking over the intervening bushes, I saw a baby rabbit come out of a tangle of brush and run to its mother. The mother sat upright and was alert for danger, but her back was toward me. The baby rushed up to her and started nurs-

In this remarkable series of pictures, Maslowski and Goodpaster have photographed



"Can I reach it? . . ."

ing. From this position, both could spring into flight readily if some foe appeared.

The first litters of the season arrive very early in the spring—in the southern part of their range as early as the first of February. Successive litters follow on into summer so long as green food is available. Mating for the early litters occurs about the first of the year in my part of California, and at that time, the bucks do considerable fighting. Sometimes I find scratched up places in my garden with rabbit hair scattered about, and I know that two bucks have been in combat. Occasionally a somewhat similar "sign," usually with some remains of the rabbit, shows where a predator has taken a cottontail. The need for the cottontail to have many broods is apparent when one considers the numerous animals in fur, feathers, and scales, that eat them.

Man, too, is an important enemy of the cottontail, but the ones of my garden have changed me from a foe to a friend. At first I did not welcome them and fought them vigorously, but in the spring, cute baby rabbits came in from the chaparral and looked so little and helpless in a hostile world, I could not bring



The eyes of young cottontail rabbits begin to open when they are six days old. When they are about 12 days old, they venture out of the nest for the first time. Photograph by Hal H. Harrison.

myself to add to their troubles. Soon they grew accustomed to me and became tamer day by day as they also grew in size. Now these

friendly little creatures are safe with me, and I should miss them, indeed, if they were to disappear from my garden.

—THE END

a female cottontail rabbit nursing her young ones. These may be the first photographs ever published which show just how it is done.



"I'll try another position. . . ."



"Oops! . . . Oh, well . . ."

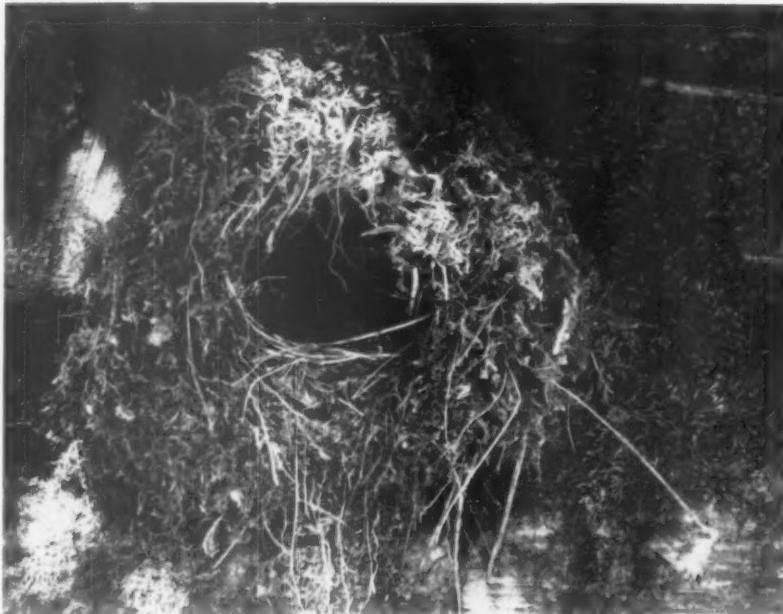
By Viola E. Washburn

ONE evening at dusk in mid-summer, my husband and I pitched our camp on a little bubbling stream at the foot of Blewett Pass in the State of Washington. A pair of water ouzels sang as they played and ducked in and out of the water. They sang for nearly an hour. I looked for their nest but had no luck.

Along mountain streams of Lassen Park, California—on the Rogue and North Umpqua Rivers of Oregon—I have seen the little slate-gray and brown bird. It looks so much the color of a rock that I often came upon it quite suddenly, as it worked nimbly and silently foraging for food. Down on the Big Sur in Monterey County, California, I combed the stream for a week, wading into nooks and curves, hoping I might come upon the nest of this bird. That week on the Sur, I followed five little ouzels from rock to rock. I sat for hours at a time watching them, hoping they might by chance return to their birthplace and thus disclose the site of their nest. I watched them swim and dive; I watched them eat; I heard them sing—but no nest did I find. These experiences had all been in July or August.

Then came the day a fisherman friend of ours said he would take us to an ouzel's nest. It was the last week of June and in our own county, Santa Cruz, in California. We had

Hunt for an Ouzel's* Nest



"Here was a nest glued fast to a log about three feet above the water."

Photographs by the author unless otherwise noted.

"The young birds were soft gray, with little tufts of feathers sticking straight up above their eyes." Photograph of young water ouzel by William L. Finley.



to slide down a steep embankment to get to the creek, then step from rock to rock to an island from which we could look across to the water ouzel's nest. It wasn't what I had heard and read about as to location. No water was dashing across its doorway. No tumbling water splashed its spray over it to keep the moss green and growing. No drooping mosses and rock plants concealed its opening, or even the nest itself. Here was a nest glued fast to a log about three feet up from the water. The log was a part of a revetment that fortified the logging-road down which we had come. It was also a part of the creek bank. The creek at this time was very low. It did skip over a few rocks and flow into a quiet pool about a foot or so deep.

To our delight, we discovered movement in the nest. A parent bird flew up to feed the young, while we sat there watching, partially hidden in the tall water plants. Little

*The American dipper, *Cinclus mexicanus*, lives in the mountain ranges of western North America from Alaska and British Columbia southward to southern California and New Mexico; eastward to the Rocky Mountains. It dwells near, and in, clear, cool rushing mountain streams.—The Editor

In her search for the nest of an American dipper, or water ouzel, the author traveled from Washington and Oregon to Santa Cruz County in California.



"The parent bird brought food to her youngsters while my husband stood only a few feet from the nest."

heads popped to the opening of the nest to get the food. This was truly an experience worth following up. The next day my husband and I returned. It was four days before we completed our observations of the activity around that nest and we learned a great deal. Our point of all observations was directly across from the nest, about six to eight feet away. The birds were curious and wary at first, but soon became accustomed to us.

The nest seemed small for so many birds. We marveled at its strength, as five wiggly little bodies moved around the inside. The dark green moss, of which the nest was made seemed to grow out of the log. It was very neatly made. Near the bottom of the entrance were the few large dry grasses so characteristic of ouzels' nests. The inside of the nest seemed to be six to eight inches deep. It was pretty and green, with lichens tucked here and there; even prettier than the outside. As the birds grew older and pressed themselves out to reach for their food, the opening of the nest became larger.

Sometimes all five pair of bright

"The female would dive into the creek and come up with a caddis-worm case." Photograph of adult dipper, or water ouzel, by William Dawson.



eyes looked out from that opening. At other times only big open mouths waited for food. The mouths seemed larger than the birds themselves, and their color on the inside was like the inside of a hubbard squash—bright orange in the innermost part and yellow around the edge. These bright colors seemed to attract small insects that the birds snapped at between feedings of the parents.

The birds themselves were soft gray with little tufts of feathers sticking straight up, back and above their eyes. These feathers, we learned, would disappear on the day the birds left the nest. Each young one had the characteristic white eyering of the parent birds.

The adult male and female birds were very similar in coloring—slate-gray and brown. Their short wings and tails gave them a chubby appearance but on close observation their well-molded bodies with the clean, scrubbed-and-shiny look gave them a sleek, trim line. We knew their thick breast-feathers enabled them to swim and forage for food in and under the water as casually as other birds foraged on land.

The young birds were fed as often as 22 times in an hour. Even before the parent birds arrived, the young began their "beep-beep-beep-beep-beep" which increased in volume as the birds increased in size. Both parents fed them, but most of the time it was the more slender bird of the two. Even though this latter

Strange

bird seemed the more colorful of the adults, we decided it must be the female. The other bird took long trips up and down the stream to return, only occasionally, with food.

The female would dive into the creek, probe among the leaves, rocks, and sticks and come up with a caddis-worm case. She climbed onto a log with the case in her beak, shook it to loosen the worm, then dropped it onto the log and pulled the grub from its home. Holding it in her beak she walked quickly along the log toward the nest, dipping and bobbing as she went.

At the end of the log she hopped from rock to rock until she was near the nest. From there she flew in a straight line upward, quickly deposited the food in an open mouth, and whirred back down the stream. We watched her catch a minnow, in the later feedings, as the youngsters grew. It was about one-and-a-half inches long. It glittered golden in the sun as she thumped it, over and over again, on the rocks. Sometimes she dropped it, but retrieved it quickly, and went on thumping. When the fish was dead or sufficiently macerated she flew up to the nest and shoved it into an open mouth of a young bird. Two gulps and the fish was down. Winged insects came next as part of the diet, with only an occasional caddis-worm. After most of the feedings, she flew directly to the water for a drink as if to cleanse her mouth.

These later feedings occurred every two minutes for awhile, then, longer lapses, but it was a steady shuttling all day. At noon there was a rest period. The parents stayed away and the youngsters made no outcry for food for 15 minutes. At this time the nestlings seemed to be sleeping. Two of them had their heads and shoulders out the entrance, mouths open and eyes shut, or, opening and closing very, very slowly, and alternately. We thought they would surely fall into the stream below.

During this rest, one parent flew upstream again. The one we called the female, perched herself on an old wire cable a few yards downstream and began to preen. Her fluffing and oiling of her feathers went on for 10 minutes, then she looked for food for herself. At the end of 15 minutes she was back at

the nest with a caddis-worm for her young. By three o'clock the shuttling of the parents with food and the calling of the youngsters was back at its old tempo. This was the procedure each day of our observations.

The water ouzel young were well organized for their nest sanitation. Every now and then there was a commotion within the nest. The two birds at the opening shifted back inside and a little downy rear pushed itself out over the edge of the nest and expelled a small white pellet which fell into the stream below. As it fell it brushed against the log and left a distinct white mark. These pellets could be found as far as 10 feet down the stream where the water had carried them. How different this process from that of the red-winged blackbird, where the parent bird removes the fecal sac from the nest, or the English sparrow which seems to disregard nest sanitation!

It had been our wish to see these young birds leave their nest, but they were a few minutes too early for us. Three of them were already on the rocks of the creek when we arrived on our last day of observation. The parents were flying from one to the other with food—still feeding them. I examined them through my binocular, and saw that the little gray feather tufts above the eyes were gone. The young birds were quite unsteady on their little legs and needed much urging from the parents to make any move. Though we could not stay to watch the remaining two leave the nest, we noted that they still wore the feathered tufts above the eyes. We hoped they would soon join their brothers and be bobbing, probing, friendly birds of the stream.

I had seen my first ouzel nest, full to the brim.

—THE END

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May we suggest that you help to insure the continuance of the ever-widening influence of our program and philosophy by remembering the National Audubon Society in your will. Suggested bequests form: I hereby give, devise and bequeath to the National Audubon Society, in the City of New York, in the State of New York, the sum of dollars (or otherwise describe the gift), to be used for the general purposes of said Society.

I believe that the readers of *Audubon Magazine* may be interested in an observation I made on April 20, 1957 at a small lake in upper Westchester County, New York. One inlet of the lake was teeming with courting and mating American toads, *Bufo terrestris americanus*. The mellow trilling of the toads plus the concentrated migration of countless small males from the woods to the inlet made this event apparent even to those who wouldn't notice the commotion in the water.

Within an area of about 100 square feet, there were, in my estimation, at least 200 pairs of American toads in amplexus. I picked up about 20 pairs and found to my amazement, five pairs where the female was dead, in the grip of the male. In all cases the eyes of the female were suffused with blood and I found it almost impossible to separate the pairs because of the great strength with which the male clutched the female. It appeared to me that these females were strangled or crushed to death by the males.

In addition to the five mentioned I also found three females floating in the water where they seemingly had been abandoned by the males after having been strangled.

George Porter

Comment

We have asked Dr. Charles M. Bogert, Chairman and Curator, Department of Amphibians and Reptiles, American Museum of Natural History, New York City, to comment on Mr. Porter's interesting letter.—The Editor

Mr. Porter's suggestion that the female toads had been crushed or strangled by the males seems logical enough. The male does indeed clasp the female with considerable vigor while waiting for her to deposit the eggs that he will fertilize. Still there is no real likelihood of the male's inflicting any real damage to the female, as anyone who has watched the mating activities of toads will readily agree.

Toads commonly assemble in large numbers at breeding ponds, and while it is exceptional to find any large number of them dead, they are, of course, exposed to greater danger from predators under such conditions. Even more to the point, such aggregations provide ideal conditions for the transmittal of diseases from one toad to another. The nature of the evidence supplied by Mr. Porter seemed to me to point to some-

Deaths of American Toads

thing of the sort. I consulted our files and readily found a report that I believe will provide all the additional clues we need.

On March 22, 1948 Julian L. Dusi of Ohio State University visited a pond near Charleston, West Virginia where he estimated that some 300 American toads were breeding. When he returned the following day he found the breeding aggregation reduced to about two dozen individuals, but dead toads were all over the place, on the bottom of the pond as well as on the shore. None of the dead toads showed any marks of violence, but it became evident to Mr. Dusi that some sort of disease was killing the toads when he returned to the pond two days later and found more dead toads, with only three pairs still alive. The following day only one male was left, and this one, like those Mr. Porter saw, was clasping a dead female.

The male was removed to the laboratory, where it died a day or so later. Mr. Dusi made suitable bacteriological

tests and confirmed his suspicions. The toads were afflicted with a disease known as "redleg." This is caused by *Pseudomonas hydrophila*, a bacillus that produces congestion in the blood vessels on the belly of amphibians, with more or less hemorrhage beneath the skin. The disease is commonly fatal. When frogs or toads are kept in the laboratory they are not infrequently afflicted by the parasite, and more than one investigator has lost all his experimental animals when he failed to detect its presence.

Mr. Dusi later went back to the pond where he'd found the dead toads and obtained samples of the water. Tests showed that the water contained the organism causing the disease. Healthy toads placed in the contaminated water did not contract the disease. However, when they were injured slightly to provide a means of entry for the bacteria the toads readily contracted the disease. This explained the presence of the dead females. For during their mating activities the clasping of the male may in-

deed result in minor abrasions of the female's skin—all that is necessary to permit the insidious organism to gain entrance to the bloodstream.

I believe that this accounts for the presence of the dead toads that Mr. Porter found. The circumstances are virtually identical with those in the West Virginian pond where Mr. Dusi conducted his investigation. I doubt whether we need consider other possibilities even though there are numerous bacteria, funguses, and protozoans that attack the skin and intestines of frogs and tadpoles. Not all of these result in fatalities, but some of the fungus diseases are highly contagious and usually fatal.

For obvious reasons more attention has been focused on the diseases of man than on other animals, but it is manifest that all animals probably have their troubles on this score. Sporadically epizootic diseases are reported for various animals although relatively few have been carefully investigated. Had Mr. Dusi not happened along when he did the dead toads would probably have gone unnoticed in West Virginia. Sometimes it is far from easy to find out what has caused the deaths of so many animals in one place. Last year numerous snapping turtles were found dead in a pond not far from New York City. I have forgotten what conditions were said to have prevailed at the time, but I did learn that a competent veterinarian examined some of the dead turtles without finding any clue to the cause of their deaths.

Some years ago vast numbers of dead salamanders were found dead in streams in upstate New York in early spring. In this instance there was the possibility that they had emerged from hibernation during warm weather only to have the temperature drop, perhaps beyond their limit of tolerance. But it seemed more probable that disease had entered the picture even though no organism was identified that might have accounted for the deaths.

Returning to Mr. Porter's account, a bacteriological test would, of course, be necessary to confirm our assumptions. But we can assure him that male toads, however vigorous they may be in their mating activities, do not strangle their mates. This sort of behavior would promptly be weeded out by natural selection. If such murderous males killed the females before they had an opportunity to lay their eggs there could scarcely be any offspring to inherit such traits.

Charles M. Bogert

Photograph of American toad singing, by George Porter.



Constantine Samuel Rafinesque

By Charles Boewe

IN the year 1818, a quizzical little man with a pinched face and penetrating blue eyes, wearing a baggy coat of yellow nankeen much tattered by hard service, presented himself to John James Audubon at Henderson, Kentucky. The little man's hair was quite as tangled as the big bundle of plants he carried on his back. Audubon, at this time still an obscure country storekeeper with an unrecognized talent for painting birds, was struck by his visitor's foreign accent and inquisitive manner. The man's forehead of great breadth and prominence, which Audubon remembered afterwards, seemed to indicate a powerful mind. In the letter of introduction handed him, Audubon read that here was "an odd fish, which might not be described in the published treatises." Such the visitor, C. S. Rafinesque, proved to be.

Audubon welcomed Rafinesque, heard of his journey down the Ohio, and listened to the news of Philadelphia's natural scientists. He talked long with him about their mutual interests in nature, and at last, early in the morning, showed the guest to his room. Hardly had Audubon gone to his own bed when he heard a tremendous uproar, and rushing back found Rafinesque naked in the middle of the floor brandishing Audubon's favorite Cremona violin about his head. He had battered it to pieces in his attempts to knock down the bats that had entered the open window. *Every one a new species!* Rafinesque had exclaimed, and he had to have specimens. Failing in his attempts, and winded from his struggle, he begged Audubon to capture some of them. Audubon, not one to do things by half measure, and seeing the violin was done for anyway, picked up the bow and smartly knocked several of the bats to the floor.



Photograph of an original painting of Rafinesque in the Transylvania College Library, Lexington, Kentucky. Photograph by Lafayette Studio.

One of the "oddest" naturalists of the 19th century is being reappraised by scientists and historians.

The man who showed such disrespect for Audubon's precious violin is still, historically, one of America's most neglected naturalists. Constantine Samuel Rafinesque-Schmaltz (as he often styled himself), sometime Professor of Natural History and Modern Languages at Transylvania University in Lexington, Kentucky, by his own count member of nearly all the leading scientific societies, was a peripatetic naturalist, dreamer—and genius.

Rafinesque found early nineteenth-century America an arena for the display of diversity of knowledge and ability, where a jack-of-all-trades, arts, and professions could turn his hand to almost anything. "Versatility of talents and of professions is not uncommon in America," he wrote in his autobiography, "A Life of Travels" (1836), "but those which I have exhibited . . . may ap-

pear to exceed belief: and yet it is a positive fact that in knowledge I have been a Botanist, Naturalist, Geologist, Geographer, Historian, Poet, Philosopher, Philologist, Economist, Philanthropist. . . . By profession a Traveler, Merchant, Manufacturer, Collector, Improver, Professor, Teacher, Surveyor, Draftsman, Architect, Engineer, Pulmist, Author, Editor, Bookseller, Librarian, Secretary . . . and I hardly know myself what I may not become as yet." Not a modest statement, perhaps, but a fair one for all that.

In origin he was truly cosmopolitan. Born in Constantinople, in 1783, of a French father and a Greco-German mother, he grew up in southern France and in Italy. As a lad he had tutors to direct his education, but it was a lackadaisical education at best; he himself was proud of the fact that he never wasted his time on the dead languages but had acquired the languages he needed when he needed them.

After a brief visit to the United States as a young man, he returned to Sicily, where he spent 10 years working with the British ichthyologist William Swainson. In Sicily he married and became the father of two children (the boy, who died in infancy, was significantly named Charles Linnaeus). There he established a scientific journal called the *Specchio delle Scienze*, and contributed numerous articles to other journals, including the *Medical Repository* of New York (America's first magazine devoted wholly to science).

Rafinesque's life was a series of pathetically comic turns; in Sicily his wife deserted him for the favors of a traveling actor, taking their infant daughter with her. Despite such disappointments, he did succeed well enough in the pharmaceutical business to come to America again in 1815, where he remained the rest of his life.

In America Rafinesque became an indefatigable traveler. His enormous ability to cover ground on foot is astonishing, but he rightly insisted that a good naturalist had to walk, because nature does not reveal herself to the observer speeding past in a carriage. He walked across the Allegheny Mountains five times. Once, wishing to go to Philadelphia from Lexington, Kentucky, he chose to walk much of the way—and the route he selected took him past Niagara Falls!

He was personally acquainted with nearly every important naturalist in America, and he corresponded with many of the famous European men of science. The naturalists Benjamin Smith Barton, William Bartram, and Samuel Latham Mitchell; the botanists William Darlington, Amos Eaton, David Hosack, Henry Muhlenberg, Thomas Nuttall, and John Torrey; the zoologists John Godman, Charles Lesueur, and Thomas Say; the ornithologists John James Audubon and Alexander Wilson—to list even a few of his acquaintances is to call the roll of natural scientists in early nineteen-century America. He was on good terms with men of affairs like Thomas Jefferson, William Maclure, and Henry Clay. He carried on an elaborate exchange of letters with scientific luminaries abroad—he was, for instance, commissioned to supply Baron Cuvier with specimens of fishes; he wrote accounts of his work to de Candolle, a Swiss; to Ferrara, a Sicilian, to Swainson, a Britisher, and to Michaux, a Frenchman.

As a result of his extraordinary collecting and classifying zeal, he originated no fewer than 3,000 new botanical genera, but such was his disrepute among his fellow botanists at the time of his death that fewer than five per cent of these have been accepted. Among the general names that he originated and that are still used are *Distichlis*, *Eatonia*, *Stenophyllum*, *Peltandra*, *Clintonia*, *Protanthera*, *Hexalectris*, *Nestronia*, *Ofaiston*, *Phyllipedium*, *Adlumia*, *Polanisia*, *Nemopanthes*, *Cladrastis*, *Nirwamia*, *Pachystima*, *Didiplis*, *Osmorrhiza*, *Spermolepis*, *Ptilimnium*, *Cymopterus*, *Meriolix*, *Oreoxis*, *Lomatium*, *Oxypolis*, *Steironema*, *Synallodia*, *Stylisma*, *Ilysanthes*, *Endopogon*, *Blephilia*, *Lepachys*, *Erechtites*, *Serinia*, and *Ago-*

seris. Many of his names perfectly valid by modern standards have been passed by simply because he published in such obscure journals or such unlikely ones (from a botanist's point of view for example—the old *Saturday Evening Post*), that other scientists were ignorant of their existence. Not until 1949, when Dr. E. D. Merrill completed his *Index Rafinesquianus*, were Rafinesque's botanical discoveries generally available to the world of science. The result of this neglect has been, as Dr. Merrill said, that "if any modern taxonomist even suggests the adoption of a Rafinesque name on the basis of priority of publication, the usual reaction is immediately to recommend that the offending name be placed in the category of *nomina generica rejicienda* so as not to interfere with the continued use of a later but currently used name" listed in the standard *Index Kewensis*.

Other things that told against Rafinesque's reputation were his habit of describing plants and animals which he had never actually seen but had read about in the accounts of others (frequently travelers' tales of little scientific standing), and his practice of comparing accounts of the same plant by two different authorities, noting minute discrepancies, and promptly proclaiming his own discovery of a new species. Ironically enough, he established one of his best known genera, that of the prairie dog (*Cynomys*), merely from an account of the animal by Meriwether Lewis; Rafi-

nesque had negotiated frantically but futilely with President Jefferson to be the scientific observer on the Lewis and Clark expedition.

There is further irony in the fact that though he did most of his work in botany, and occupies the unique position of having suggested more botanical genera than any other botanist in the whole history of the science, Linnaeus not excepted, his slimmer work on the fishes of the Ohio River has better stood the test of time. This came about because David Starr Jordan took the trouble to compare Rafinesque's descriptions with actual specimens, and was able to bring into acceptance many of his genera and some of his species as well. Likewise, Rafinesque named the mudpuppy (*Necturus maculosus*), and this binomial has never been questioned. The northern copperhead snake (*Agkistrodon mokasen cupreus*) was described and named by Rafinesque in 1818. But in botany, so prolific was his pen that where he thought he could distinguish 35 species of *Trillium*, modern botanists have been able to recognize only about 20; it is little wonder that the mention of his name still brings dark mutterings to the lips of some systematic botanists today.

Yet why Rafinesque fell so far from grace requires more than a simple explanation. Even the distinguished botanist Asa Gray, who accused him of having a monomania for new species, admitted at the time of Rafinesque's death that many of his names "should have been adopted; some as a matter of courtesy, and others in accordance with strict rule." Rafinesque had opinions—often astonishingly advanced opinions—on a variety of subjects, and he expressed them with a trenchant pen, frequently in an acidulous style, for he wrote before scientific writing had become tamed and housebroken. Since he never hesitated to call someone a fool whom he thought a fool, he quite naturally made enemies. He acquired the enmity of the eminent paleontologists Richard Harlan and G. W. Featherstonhaugh, for example, by exposing their evidence of *Rhinoceros alleghaniensis* for what it was—not a fossilized rhinoceros jawbone but merely a piece of curiously shaped stone. In turn,

ABOUT THE AUTHOR

Dr. Boewe writes us that he got his Ph.D. at the University of Wisconsin in 1955. His degrees, he says, "are in English, but my specialty is American literature." He has had several articles and sketches published in the *Atlantic Monthly*, *Prairie Schooner*, *New Mexico Quarterly*, *American Literature*, and other literary magazines. Dr. Boewe is now the post-doctorate fellow in American Civilization at the University of Pennsylvania, Philadelphia, Pennsylvania. He is trying to collect Rafinesque's letters with the view of writing a full-length biography of him.—The Editor

his petulance invited the charge his enemies brought against him of having described fossil jellyfish, and, so they declared, of having classified 12 species of lightning flashes. He had the obstinacy of genius coupled with the credulity of innocence, and even when he made atrocious mistakes he was unable to acknowledge them with grace. Audubon, who enjoyed a good practical joke, once told Rafinesque that there was a fish in the Ohio River which the natives called the devil-jack diamond-fish, a fish with scales so hard they were bullet-proof and could be used to strike fire with steel. Rafinesque, never doubting the possibility of such a beast, promptly and solemnly recorded it for science, naming it *Litholepis adamantinus*.

However absurd and unscientific Rafinesque could be sometimes, such an event at least illustrates how he was, in one respect, far in advance of his scientific colleagues. The reason he so readily swallowed the story of the devil-jack diamond-fish was that he had no patience with the prevailing concept of the fixity of species. To him the entire universe was bubbling with continuing creation, new species coming into existence hourly, and from them new genera in turn; he was probably the earliest American botanist to sense the inadequacy of the static Linnaean system of classification and to embrace Jussieu's system of natural families. He thought it highly probable that other planets were inhabited; and as far as this planet is concerned, he couldn't imagine why naturalists should argue whether a plant represented a new variety of an old species or a newly-discovered species. If it is only a variety, be assured that it will soon become a new species; "every variety is a deviation which becomes a species as soon as it is permanent by reproduction. Deviations in essential organs may thus gradually become new genera," he wrote.

Here we have the most important theoretical contribution of Rafinesque to the natural sciences. If his fellow scientists had listened to him, America today might have the honor of being the home of the theory of evolution, for he first advanced this idea in 1833, 26 years before the advent of Darwin's "Ori-

gin of Species"—in the sixth edition of which Darwin gave appropriate credit to his American predecessor. "*Every species is a variety, and every variety is a species!*" Rafinesque thundered, jumping into italics to command attention; "the only difference is in their age! and there is no actual limit between them: no more than between a hill and a mountain, a lake and a pond, a river and a creek!" But others were not ready for such heterodoxy; seizing on his odd appearance, they labeled him an eccentric. Not understanding his system of classification by natural affinities, they saw only the slipshod quality of his catalogs of new species—the elaboration of which in his later years surely did come to be something of a mania.

The seven years that Rafinesque spent as professor in Kentucky were the happiest in his life, despite the absurdly low income, the intramural bickering of the faculty, and the frustration of his plans to edit a magazine open to all contributions of knowledge. Rafinesque was at Transylvania University when it was the intellectual center of the Lexington that had earned for itself the title, "Athens of the West." There he was appreciated by a society eager for the cosmopolitan culture he could bring it; he taught French to the ladies of the town; he made line drawings of reigning society belles; he published poems in both French and Italian as well as English; and, best of all, he enjoyed the companionship of John D. Clifford, the most sympathetic friend he ever had, and an erudite student of nature in his own right. Like so many other disappointments in his life, though, Clifford and he had time for only one extensive botanical expedition in eastern Kentucky before Clifford's unexpected death. The only man who ever really understood him now dead, Rafinesque said that he "ought to have left the country directly." Yet, finding virtually unexplored country all about him—unexplored by a professional naturalist—he decided to make the best of the opportunity. In what short periods he could snatch from his teaching duties, he undertook a complete one-man natural history survey of the Commonwealth of Kentucky—this at a time when co-

operative geological surveys were just being thought of in the East.

He left Kentucky for good in the winter of 1825-26, bitterly disappointed at the way his scientific work had been received by his university colleagues who thought of education as nothing but the study of the Classics. He returned to Philadelphia, where, with numerous trips about the countryside in search of plants, he remained until his death in 1840.

After he got back to Philadelphia, he devoted much of his energy to publishing the manuscripts he had been assiduously compiling for many years. His labors are all the more remarkable when we consider that he had to pay the entire cost of the printing of most of his books, because their highly technical nature severely limited their audience. He made the money to support his meager existence and extensive publication largely from an herbal "cure" for tuberculosis which he compounded and named Pulumel. He labored so mightily that the bibliography of his published writings lists more than 900 items; yet he left many manuscripts unpublished at the time of his death. Dying in the most abject poverty, with some chance that his body would be sold to a medical school for dissection, he nevertheless left directions for his remaining writings to be printed at the expense of his estate. His estate, however, ended up in debt to the executors, and his manuscripts presumably were tossed on the Philadelphia dump.

This unhappy and in many ways outlandish man who passed through American life like a comet from the outer reaches of space—brilliant, but disdainful of the scientific galaxy around him, and in turn, ignored by it—was nevertheless a true naturalist whose warmest love was reserved for the outdoors. Well he knew the annoyances, the dangers, the despairs of the field naturalist. "Yet although I have felt all those miseries," he wrote; "in fact, I never was healthier and happier than when I encountered those dangers. . . . I like the free range of the woods and glades; I hate the sight of fences like the Indians."

Nature continually wore her most welcoming smiles for him. With

each discovery, however trivial, he said, "you feel an exultation, you are a conqueror, you have made a conquest over nature, you are going to add a new object, or a page to science. This peaceful conquest has cost no tears, but fills your mind with a proud sensation of not being useless on earth, of having detected another link of the creative power of God." And in the long run, the petty quarrels, the rivalry, perhaps even the desire to add to the sum of human knowledge—all these pass away. "When you ramble by turns in the shady groves, grassy glades, rocky hills, or steep mountains, you meet new charms peculiar to each;

even the gloomy forest affords a shady walk. When nothing new nor rare appears, you commune with your mind and your God in lofty thoughts or dreams of happiness. Every pure botanist is a good man, a happy man, and a religious man. He lives with God in his wide temple...."

Rafinesque's reputation has been slowly rising. As early as 1888 the historian of science, G. Brown Goode, saw that Rafinesque had been truly gifted, and estimated that he lived a century too soon. In 1924, when his pauper's grave was threatened by the expansion of the city of Philadelphia, his bones were moved to Transylvania and placed

in a crypt with fitting ceremony; and in 1940, on the centennial of his death, Transylvania honored his memory with a colloquium in which distinguished scientists took part. Most important of all were the efforts of Dr. E. D. Merrill, of Harvard University, and Dr. Francis W. Pennell, of the Academy of Natural Sciences of Philadelphia, to restore to Rafinesque credit for his valid discoveries—a herculean task still not completed which, if ever finished, will soften some of the sting of Rafinesque's own words that appear on the slab covering his remains: "To do good to mankind has ever been an ungrateful task."—THE END

★ ★ ★ NATURE IN THE NEWS ★ ★ ★

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May 23, 1957.*

POISON

The aerial DDT-spraying campaign being carried out by the Department of Agriculture against the gypsy moth has raised the dander of a good many otherwise peaceful residents of Long Island; and it has also raised some serious problems that are now in the hands of the United States District Court in Brooklyn.

Objections to this gigantic spraying campaign rest on two basic grounds. One involves the potentially harmful effect of DDT itself, both on the health of human beings and on mammal, bird, and particularly on beneficial fish and insect life. The other concerns the moral and legal right of any governmental agency to spread this poison over private property without permission of the owners, in the absence of overriding and urgent demands of public health and safety. Neither of these problems is easy to solve; but in the present state of inadequate information about the long-range effects of widespread use of DDT (not to mention more toxic substances) such a program should be approached with the utmost caution.

The Department of Agriculture states that in the concentration now used—one pound of DDT per acre—the spraying will have no harmful effect on man or farm animals, and offers slight if any hazard to birds and wildlife. Others disagree, particularly the embattled Long Island householders who have carried the case to the courts. Concentra-

tions of DDT heavier than one pound per acre have on occasion proved disastrous; but there are also records of much lighter doses killing fish and beneficial insects such as honeybees.

The Fish and Wildlife Service, some of whose experts have expressed grave misgivings over the widespread use of poisons, is supporting a bill (H. R. 783) now in Congress to encourage a comprehensive study of this whole matter. The delicate balance of nature—the relationship between insects, fish, birds, animals, plants, and humans—is something that man too easily trifles with, frequently to his own grave hurt. An ironical illustration of the point lies in the fact that the gypsy moth itself was artificially introduced into the United States from Europe almost a century ago to improve the silkworm—with the destructive results we see before us.

*Reprinted from The New York Times,
June 11, 1957*

DDT Spray Alarms Audubon Society

The National Audubon Society expressed concern yesterday over the federal-state program for spraying gypsy moths with DDT.

John H. Baker, president, said a statement prepared by the society's board of directors, took cognizance of "numerous reports and complaints" arising from the spraying program being conducted with aircraft.

He said the society "recognizes the difficult problem faced by any public agency under pressure to control such organisms as the gypsy moth." But, he said, there are "reliable reports of resulting kills of fish and birds, let alone insects and many other forms of animal life in water, while apprehension is felt concerning its ultimate effects on larger organisms."

"The society points out," he continued, "that it is impossible to apply poison from airplanes with rigid precision due to normal turbulence of the atmosphere, the irregular pattern of land, water, and vegetation, and other technical problems; that it is also a questionable policy to scatter widely any toxic substance where total effects are not reasonably predictable."

*Reprinted from The New York Times,
April 14, 1957*

Safety For Birds

A Picture Window Shade Ends Flight Hazard

By John K. Terres

The offices of the National Audubon Society here in New York are receiving anxious letters from home owners all over the country who want to know how to prevent birds from smashing into their picture windows. Many people fear that the increasing number of songbirds killed by flying into the glass

Continued on Page 175

Adventures

By John B. May



Photograph of short-billed gull by Allan D. Cruickshank.

Heavy black line indicates the ship's route on the Inside Passage.



A QUESTION which is presented to us "oldtimers" with some frequency is, "Where can we go to see more birds or 'new birds'?" In the spring our answer is likely to be, the Blue Ridge Parkway from Shenandoah National Park to the Great Smokies, in rhododendron and azalea time; in summer, the Gaspé Peninsula in eastern Quebec, with its great rookeries of gannets and cormorants, its eider ducks, and its northern songbirds in their breeding ranges; in autumn, Cape May Point in New Jersey, and Hawk Mountain Sanctuary in Pennsylvania; and, in winter, Florida and the Everglades National Park and all the swarming birdlife from Wakulla Springs to the Keys, or it may be the roseate spoonbill and whooping crane country of the southern tip of Texas, or the cactus deserts farther west.

But there is another outstanding "bird trip" which has been only lightly touched upon—the "Inside Passage" cruise to the Panhandle of Alaska, unique among scenic journeys. For five days from Vancouver, British Columbia, north to Skagway,

ABOUT THE AUTHOR

Dr. John B. May's interest in natural history goes back more than 70 years. He is a distinguished New England ornithologist, who assisted Edward Howe Forbush when Forbush was Director of Ornithology of the Massachusetts Department of Agriculture. Dr. May succeeded him in that position. He collaborated with Forbush in producing the well-known three volume work, "Birds of Massachusetts and Other New England States," and is the author of "The Hawks of North America," published by the National Audubon Society in 1935. He has been an associate editor of the *Bulletin of the Massachusetts Audubon Society* for a number of years, and has been a director of the Massachusetts Audubon Society for more than a quarter of a century. A brief biographical sketch of Dr. May was published in the *Bulletin of the Massachusetts Audubon Society*, November 1945 issue.

—THE EDITOR

for Bird-Watchers on the INSIDE PASSAGE

Alaska, and another five days returning, one is never out of sight of land, and often our steamer picks its way less than a cable's length from the shores which rise precipitously from deep water. Except for two or three breaks of a few hours each, as we cross Queen Charlotte Sound or the Dixon Entrance, or skirt Baranof Island on our way to Sitka, chains of islands protect us from the surging waters of the vast Pacific, so that sea-

sickness is practically unknown. We are threading our way over the valleys of a drowned mountain range, of which the hundreds of heavily wooded islands are the still surviving summits. Some of the channels followed are so narrow that they are known as "canals" but no man-made canal ever had shores as steep and picturesque as these North Pacific fiords and

landlocked passages with their ever-changing, ever-beautiful, scenery. At places tremendous cliffs tower above the water's surface and filmy waterfalls drop sheer across their rugged faces. Then a narrow valley opens up briefly and we see in the distance a green, hanging glacier, source of the rushing stream and the waterfall. And in the still more remote

A great many birds can be identified from the deck of the steamer. Photograph courtesy of Canadian National Railways.





Black turnstones photographed by Roger T. Peterson.

background gray granite peaks rise in jagged serrations, tier on tier, many of them bearing a white cap of everlasting snow and ice.

The warm waters of the Japanese Current lave the islands and temper the climate, but many of the mountain streams are glacier-fed, so that

there is great variation in the coastal water temperatures, and this conduces to an abundant marine life, and this in turn to a profusion of interesting water birds of many different species. And a great many (but not all) of these birds may be readily identified from the deck of

our steamer as we cruise comfortably along in these sheltered waters.

A complete list of the birds which may be seen on the Inside Passage cruise would be long and tiresome but there are certain birds which stand out in my memory after a lapse of more than 15 years since my first (and best-remembered) visit to Alaskan waters. We sailed late in June from Vancouver, beautifully located in an amphitheatre of mountains on a deep-water arm of the sea, in the evening, after a day of watching western birds — chestnut-sided chickadees, Oregon juncos, and even Chinese crested mynahs. Our boat was accompanied until dark by a noisy flock of great, glaucous-winged gulls, following eagerly in our wake or alighting on the after awnings and even on the tip of our flagpole. That night we had a superb aurora borealis flickering in the northern sky, and we heard for the first time the soft calls of night-flying water birds which were to be our accompaniment for the entire cruise in British Columbia and Alaskan waters.

Aerial view of the steamer on a voyage up the Inside Passage. Photograph courtesy of Canadian National Railways.



The next morning, and from then on, during every possible minute of the long northern days, a little group of us stood in the peak of the bow, scanning the waters, the sky above, and the wooded islands and their beaches, watching for new species and noting their actions as we compared them with eastern birds of our acquaintance.

Among the comparatively few land birds identified from the boat, the northern bald eagle was most conspicuous. A white spot against a background of towering evergreens was likely to be the "bald" head of our national emblem, but the all-dark immatures were harder to pick out except when seen in flight. At our brief stops at various ports we found a number of interesting birds, some entirely new species for us, others were races (usually darker) of eastern species.

Prince Rupert, northernmost of British Columbia ports, gave us ravens perching on telephone poles and the roofs of houses; the rufous hummingbird was abundant in the masses of brilliant fireweed flower-

ing in that recently cleared townsite; Steller's jay, Vaux's swift, violet-green swallow, russet-backed thrush, sooty fox sparrow, dusky song sparrow, western winter wren (singing on a wire overhead), varied thrush—these were a few of the birds seen and which come to mind readily. At Sitka ravens were picking up scraps on the wharves and patrolling the flats at low tide, paying little attention to passersby. And during our 36-hour stopover at Skagway with its trip by narrow gauge railway through Dead Horse Gulch to Carcross and then by wood-burning stern-wheeler to West Taku Inlet, we added the Canada (gray) jay, rosy finch, and Bohemian waxwing, and on two occasions glimpsed (very briefly from the moving train) some ptarmigan—"species unknown."

But our chief interest on the trip, naturally, was the abundant and always present water birds. Pacific and red-throated loons in their interesting summer plumages were common, and one of the larger loons appeared to have a yellow bill, though the yellow-billed loon is not sup-



The greatest surprise of the trip was the black-footed albatross. Photograph by Lewis Wayne Walker.

The trip includes the very scenic, all-day cruise in the Gardner Canal. Photograph courtesy of Canadian National Railways.



posed to be found on that coast in summer. But my greatest surprise, probably because I associate its family with much warmer waters, was the black-footed albatross. We saw a dozen or so on each of three trips in different years, as we skirted the Pacific shores of Baranof Island, and the long narrow, almost straight wings with their tremendous spread and the birds' effortless sailing in the wake of our steamer, are unforgettable. I questioned my own snap identification until the birds came so close that I could see plainly the powerful, hooked beak, and a quick reference to my pocket bird guide told me that they occur regularly in these waters. At another time and place, on that first memorable cruise, a brief view of a lone albatross, lighter brown in color, I put down tentatively as possibly an immature short-tailed albatross, now a very rare bird in the northern Pacific. The large white adult with its blackish primaries would have been unmistakable, and I saw such a specimen later, taken in British Columbia waters, in the museum at Victoria.

Crossing Dixon Entrance on this first trip, the sea ahead of us was absolutely black with shearwaters, literally thousands of them, and as they rose from the water the effect was that of a band of low-lying smoke in the distance. They were presumably sooties, but I hesitated to name them specifically. Their close relative the little fork-tailed petrel, looking like a pearl-gray Leach's petrel, was fairly common and we often saw it at close range. Rafts of diving ducks were seen at intervals, mostly scoters, and as we went north we watched for Pacific eiders. A family of western harlequin ducks at close range in Skagway Harbor spiced our landing at that northern terminus of our cruise. Flocks of shorebirds were seen occasionally in flight, outstanding among them being the black turnstone, while our unsuccessful quest for the black oystercatcher caused much amusement when the non-birding husband of an ardent bird-watcher dubbed it the "black oystercracker," and by that name we still think of it. A good-sized flock of shorebirds which arose from the open water in front of our steamer was, of course, phalaropes, probably northerns, but again distance and lighting condi-

tions made positive identification impossible.

Flocks of gulls came out from every port to greet us and followed us for miles as we departed. Most abundant was the big glaucous-winged gull, but perhaps the most interesting bird of this family was the short-billed gull. It followed closely the little stern-wheel steamer on which we made the scenic cruise from Carcross (named because it was once a famous crossing place for caribou on the Yukon River), the length of Lake Tagish to Ben-my-chree snuggling at the foot of the glaciers that dominate West Taku Arm. Arctic terns were also common on Lake Tagish, high up near the source of the mighty Yukon, which rises only about 20 miles from salt water near Skagway and flows 2,000 miles before it reaches tidewater at Bering Sea.

But the most intriguing group of birds, to us easterners, was that of the alcids, the family which includes the auks, murres, and puffins. Soon after we left Vancouver, as the darkness deepened that first evening out, we heard the twittering calls of birds passing back and forth off our bows. The next morning we began

to see small, chunky birds ahead, swimming buoyantly or buzzing past with rapidly beating pinions. As we neared those in the water they would look around in an excited manner, paddle ahead in desperate haste for a short distance, then spreading their wings they would dive from sight, to emerge hurriedly and perhaps dive again, or take off in splashing flight across the waves. Glasses were quickly trained on the birds and soon we began to distinguish between the species. Pigeon guillemots, looking very much like the Atlantic black guillemot, were common, in their black summer plumage with big, white, wing patches. California murres were also seen in flocks of varying size, again very much like our Atlantic murres but, of course, with the black throat of the breeding season. Then we began to identify marbled murrelets,* smaller birds with dark brownish backs and heavily barred underparts. These were the most abundant of the alcids we saw on this coast, while their breeding habits are apparently the least well known. It was probably their voices which we heard chiefly during the hours of darkness. Slightly smaller was Cassin's auklet, a dusky bird with little in the way of distinguishing markings. In several instances we were close enough to identify the rhinoceros auklet (now classed as a puffin) by the short horn-like process rising from its rather over-developed upper mandible. Our identification of the ancient murrelet, however, was put down as "probable but not positive," for a rear view of small re-treating birds is not too satisfactory, especially when the observer is also in motion, as we were on the steamer's deck.

TRANSPORTATION

The author says that he has taken several boat trips the length of the Inside Passage (from Vancouver, British Columbia to Skagway, Alaska). He usually sailed from Vancouver via a steamship of the Canadian National Railways, which he says takes about a day longer than the route traveled by ships of the Canadian Pacific Railway. The Canadian National Railways route "includes the very scenic all-day cruise in the Gardner Canal. . . . At Skagway the best trip is the one to West Taku Arm, well-worth the extra cost. . . . Fares on the Canadian Pacific Railway run from about \$195 upward in Canadian dollars (per person); Canadian National Railways from about \$210 upward in Canadian dollars, the difference being the extra day at Gardner Canal. Neither rate includes the stop at Skagway, and both start from Vancouver."

About clothing and what to wear, the author says, "Anything fit for early spring or late fall, plus topcoat, etc., for evenings on the boat. Average summer temperature is between 60 degrees and 70 degrees Fahrenheit. The boats run only in summer; late June or July is best for birding."

—THE EDITOR

* For an account of the marbled murrelet, see "Enigma of the Pacific," by C. J. Guiguet, *Audubon Magazine*, July-August 1956 issue, p. 164.—The Editor

dedicated to *Lunda cirrhata*, in which the recurring refrain is

"There ain't nuffin' funnier'n a puffin!"

To see this "awkward zany among birds," and many others of interest, take the Inside Passage cruise to Alaska!—THE END

Hawks and Owls Now Protected in Ontario, Canada

At the third session of the twenty-fifth Ontario legislature, an Act to amend the Game and Fisheries Act of that province was passed, which Act extended protection to hawks and owls except where they are causing damage to property. The complete protection already given to eagles and ospreys was also extended to vultures.

Conservationists throughout Canada and the United States have watched the gradual development of bird protective legislation through the continent with increasing interest. The recent legislation in Ontario will give further inspiration to those in other states and provinces where such legal protection still remains unenacted.

In its presentation to the Ontario government on behalf of the raptorial birds (which submission was made in cooperation with the Federation of Ontario Naturalists, the Ontario Federation of Anglers and Hunters and other organizations), the Audubon Society of Canada asked that all birds of prey be protected except that the owner of poultry or other domestic animals and the members of his immediate household and his bona fide employee might destroy by shooting any hawk or owl doing real damage to the said poultry or other domestic animal.

The new Ontario Act provides that any person may destroy any hawk or owl on his own lands, in defence or preservation of his property by any means at any time. It is to be hoped that such means of defence will be limited to shooting, and that pole traps and other such devices will not be employed. Too often the innocent party to a chicken theft is trapped, whereas destruction of an animal in the act by shooting guarantees that this possibility is avoided.

This legislation will no doubt assure Ontario farmers that their interests will be protected at all times. It will also

assure Ontario conservationists that the beautiful, valuable birds of prey will now be free from unreasoning persecution, and that they will be permitted to play their vital part in the functioning of the wild community.

The Audubon Society of Canada extends its sincere gratitude to all those members, affiliated organizations, other groups, and individuals who gave so generously of their time and their effort in the work to encourage and foster public support for this new Ontario legislation. It is hoped that conservationists in those states and provinces where protection of the raptorial birds is not yet accomplished will find in the Ontario development the encouragement and inspiration to renew their efforts in that regard. Certainly all will join in congratulating the government of Ontario on this important, progressive step in wildlife legislation.—JOHN A. LIVINGSTON, Executive Director, Audubon Society of Canada, 181 Jarvis Street, Toronto 2, Canada.

National Grange Resolution Endorses Model Hawk and Owl Law

"A major national agricultural organization went on record last fall (1956) in urging protection for the . . . birds of prey when the National Grange passed a resolution in favor of the model law designed to protect hawks and owls from general shooting, according to the Wildlife Management Institute.

"This same model law was included in the suggested state legislation program for 1957 that was developed by the Committee of State Officials on Suggested State Legislation of the Council of State Governments. The suggested legislation would protect all species of wild birds, except English sparrows, European starlings, and crows, but would permit the shooting of hawks and owls when in the act of destroying poultry."—*Outdoor News Bulletin*, April 12, 1957, Wildlife Management Institute, Washington 5, D. C.

NOTICE TO MEMBERS AND SUBSCRIBERS

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NATURE IN THE NEWS

Continued from Page 169

may soon rival the yearly destruction of birds by automobiles.

Apparently, birds in gardens see the reflected trees, shrubs, and grass in a window as an extension of the garden. When they try to fly into it, they strike the window glass and are badly injured or killed.

Several years ago, I learned of one of the best solutions to this problem I have ever found. A woman in North Carolina wrote me that she used very sheer nylon marquisette to completely cover the picture window opening. She stretched the nylon tightly across the outside of the window opening. Then she set the material firmly in place by tacking a narrow strip of easily removable molding over the marquisette (around the outside of the window frame).

Sheer Screen

The screening permanently protected the birds from flying into her picture window. Outside, the birds could not see the reflected image of the garden in the window because of the fine-mesh nylon screening. From the inside, anyone in the house still could see into the garden because the nylon is so sheer. Nylon marquisette (or dacron) costs about \$1.19 a yard. When used as an outside screen, it needs to be renewed about once every two or three years.

For those who might object to the appearance of a nylon screen across the outside of the window, there is another solution. Near Thomasville, Ga., a man installed an attractive awning above his picture window. When lowered in place the awning covered slightly more than the upper half of the window. The shade was satisfactory enough to keep birds from hitting against the glass. There might be one drawback to the low awning—it may be necessary to sit in a chair to have a full view of the garden. Yet this is a small price to pay when the birds are safe.

—THE END

BIRD-FINDING WITH DR. PETTINGILL Where to go—When to go—What to see



Dr. Pettingill's column has not been discontinued, but will appear again beginning with a fall of 1957 issue.—THE EDITOR.

SUMMER IN A PRAIRIE MARSH

Continued from Page 157

and, the next thing I knew, a young marsh hawk was standing in the shallows close to me and drinking like a farmyard chicken from a dish. It gave such an impression of looking everywhere at once that I dared not move more than my eyelids. I felt mosquitoes on my neck and face and let them bite, until the hawk, in its own good time, flew to a shaded dead tree.

Through "reading sign," we learn of the animal life in the dense vegetation of the shallow shore areas. It is true that blackbirds and sparrows and wrens fly about, that we may flush a rail or an American bittern, or perhaps surprise a raccoon or a skunk along the shore, but their trails and feeding places tell us much more of what goes on.

Trails run in shallow water, between or under the heavy growths, with muskrat cuttings in little piles to the side, and some of these trails extend into the shore growths. A trail is a trail for any kind of creature that wants to use it. It is followed by everything from mice and frogs up to the larger mammals. Shore trails serve as main highways of travel or branch into networks of lesser trails. They tend to be favored by predators that eat crayfishes.

The mink trails are the ones that I like to study, for they reflect so much of the day-by-day drama of the marsh edge. Either in the trails or at the openings of den sites—as about holes in the upper parts of old muskrat burrows—the "sign" tells of staple diets of crayfishes and frogs, or of water beetles or dragonflies or blackbirds or young coots. The mink trails are sometimes littered with clam shells where the marsh is lake-like, or with dry-land prey when the minks have access to an inviting source of mice, ground squirrels, grasshoppers, or land birds. On duck marshes, there may be ducks of all ages in the mink trails that are pulled into the den holes; on muskrat marshes, muskrats may be among the mink's most conspicuous victims.

Hunters or trappers may regard these dead ducks or muskrats with something less than pleasure, but it is easy to arrive at wrong answers as to what this predation means in terms of the duck and muskrat pop-

ulations. Mink predation upon muskrats has been studied with particular thoroughness on Iowa marshes and proves to be, under normal conditions, mainly a matter of the minks utilizing part of the biological wastage of muskrat populations. Up to midsummer, nearly all of the muskrats preyed upon by minks on the Iowa areas are the strife-battered excess males that are forced to wander and live in dangerous places because of the intolerance of their better environmentally-situated fellow muskrats. In mid- and late-summer, most of the muskrat victims of minks are either surplus young, forced into the dangerous shore zones to keep out of the way of their intolerant elders, or animals placed under overwhelming disadvantage through storm or drought. Mink victims, therefore, are not just any individuals that minks care to prey upon but rather those falling into special classes of vulnerability before becoming victims.

Muskrat flesh also becomes available to minks in substantial quantities at times of disease epidemics. Some minks modify their usual habits to take advantage of such sources of food. Instead of living in the shore zones that are rich in crayfish, they maintain summer residence far out in a marsh in the midst of disease "hotspots" as long as the dying of the muskrats continues.

After spring had passed, for two consecutive summers, minks stayed over in deep-marsh "hotspots" on a northern Iowa study area, and, each summer, I came to recognize at least three of the minks individually. The muskrat lodges taken over by the minks had a tousled appearance caused by the surface nests in which the minks slept. I would slip up to these nests in a canoe, hoping to find a mink asleep, and sometimes I found them so. I would note marking patterns and color differences and perhaps watch the breathing movements of the curled-up, partly-buried body for a few minutes because I liked to. Sometimes, I could withdraw unnoticed by the wild one. Sometimes, it would rear up and face me for an instant before diving into the water with explosive suddenness. Or, the nest might become empty in front of my eyes, the loose vegetation of the top of the lodge might quiver, and there might be a soft splash with a string of bubbles

coming up from a straight underwater trail. The mink might surface in plain sight close by, or the bubble trail might disappear in the rushes, and the rush stems move a little and continue moving a little farther and farther away.

The muskrat lodge tops frequented by the minks of the marsh center have their coarse remains—the wings and large bones and skins of terns, grebes, coots, rails, and blackbirds, and those of ducks and muskrats. Feather debris extends down into the holes leading to the old muskrat chambers, and, when the outside of a muskrat lodge is littered, the inside also may be. The latrines of the mink reveal much of the smaller prey that is eaten in entirety: the red down and the beaks of coot chicks, the dark and light down of grebe chicks, and the fur and bones of marsh-dwelling meadow mice.

It is often plain that old bodies are rotten when the minks pull them out of the water and leave them on top of the muskrat lodges. Ducks, coots, grebes, and muskrats, all fuzzy with water mold and with appendages fallen off, may lie there drying or show freshly-eaten parts. Granted that hunting or scavenging out in the marsh center may be hard going for the minks at times, the minks may neglect obvious sources of staple prey, such as crayfishes, to feed upon muskrat flesh—rotten or not—as long as it is available. Despite this selectiveness for muskrat flesh and the motivation that dead muskrats offer minks for staying around a spring or early summer disease "hotspot," the minks may not find more than a minor fraction of the bodies of muskrats dying there.

It may be different with raccoons. Abundant raccoons may be so thorough in their warm-weather searching as to leave scarcely any dead muskrats in a local "hotspot" area. One mid-June day, I cruised a notorious "hotspot" and found only two dead muskrats, both floating some distance from lodges. The lodges, themselves, were leveled by raccoons in six acres of disease-swept marsh, and there, asleep on a flattened lodge 200 yards from shore, lay a mother and five, third-grown raccoons. As my canoe passed near the lodge, the young raccoons lying with their masked faces turned in

my direction, opened their eyes, and closed them again.

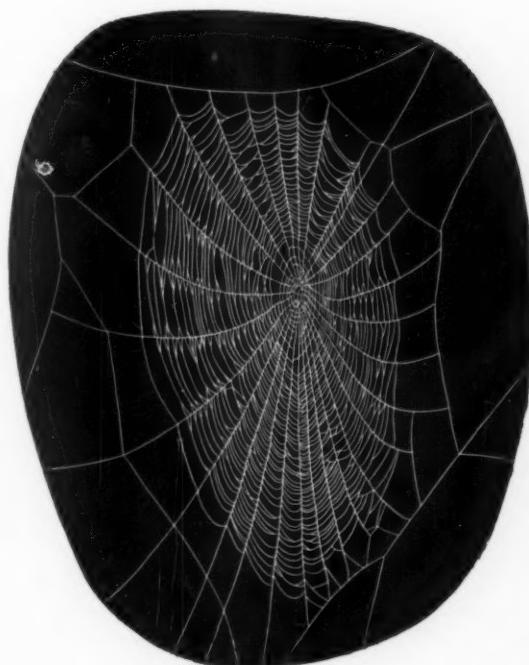
Sometimes, young minks live in a deep-marsh muskrat lodge. They may be blind and helpless, tucked away, the whole litter of them, in the old muskrat chamber; or they may flit in and out of holes, not helpless at all. To an observer, there may be intent small faces in the shadow of the holes, withdrawing and coming back again; or there may be no minklets in sight, but from the interior of a lodge may come the grating sounds of quarreling.

As a mink-riddled muskrat lodge reeks of marsh dead, and blue-bottle flies go in and out of holes, there may be no more items appearing, and a neighboring lodge may show mink holes, their fresh droppings, and some feathers and muskrat fur. Sometimes minks live in nests or in the lodges long past the period of their feeding upon muskrats. Sometimes they move into another part of a deep-water marsh having a thriving muskrat population, yet the food-remains in the nests and latrines of the new place may have nothing of muskrat. Or later, when the muskrats of the more central parts of the marsh stop dying, our deep-marsh minks—and raccoons—may go back to shore. That is where the majority of our minks and raccoons in the north-central states spend their summers, anyway.

The marsh edge can be a truly attractive place for predators or scavengers seeking the exploitable animal life. Ailing or overflow animals from the marsh center congregate there, fresh carrion washes in, land animals come there to feed, drink, or roost. There may be a heron rookery in adjacent trees. Fishes brought to the young herons fall to the ground and sometimes the young herons fall out of the nest, too. One species may come to the marsh to escape enemies, another to find prey. In northern wildernesses, the marsh-edge visitors include wolves, bears, otters, skunks, and minks; in the western high plains—coyotes, badgers, skunks, and minks; in the north-central states—foxes, weasels, raccoons, skunks, and minks. Over most of the continent where glacial marshes occur, the marsh edge may be said to belong to the minks as much as to any single form.—THE END

HOW IT GOT ITS NAME

cobweb



Drawing by Walter Ferguson.

By Webb B. Garrison

SPIDER'S silk is among the strongest of all fibers—natural or artificial. In terms of clinging power and elasticity it probably has no equal. Loosely-built houses of medieval England offered a haven to the tiny animals, so their sprawling nets were met with very often. They also abounded along forest trails.

Few everyday annoyances were worse than that of walking into a web, then trying to pull it from one's face and hair. Evidently this was a commonplace experience, as it still is in our own countryside today. Islanders of the period joined

cuppe (head) with *web* (net) to form *coppeweb* as a name for the spider's trap.

Like many other everyday terms, it was gradually simplified. By the time Shakespeare wrote the "Taming of the Shrew," play-goers knew what was meant when a character inquired whether the house was trimmed, "rushes strew's, cobwebs swept."

As a back-formation, from the name of its net, the spider itself was occasionally known as the "cob." This usage vanished long ago. Yet the spider's mesh, which seldom snares a city-dweller's head, is still known as a *cobweb*. —THE END

HIGH-TENSION *REDTAILS*

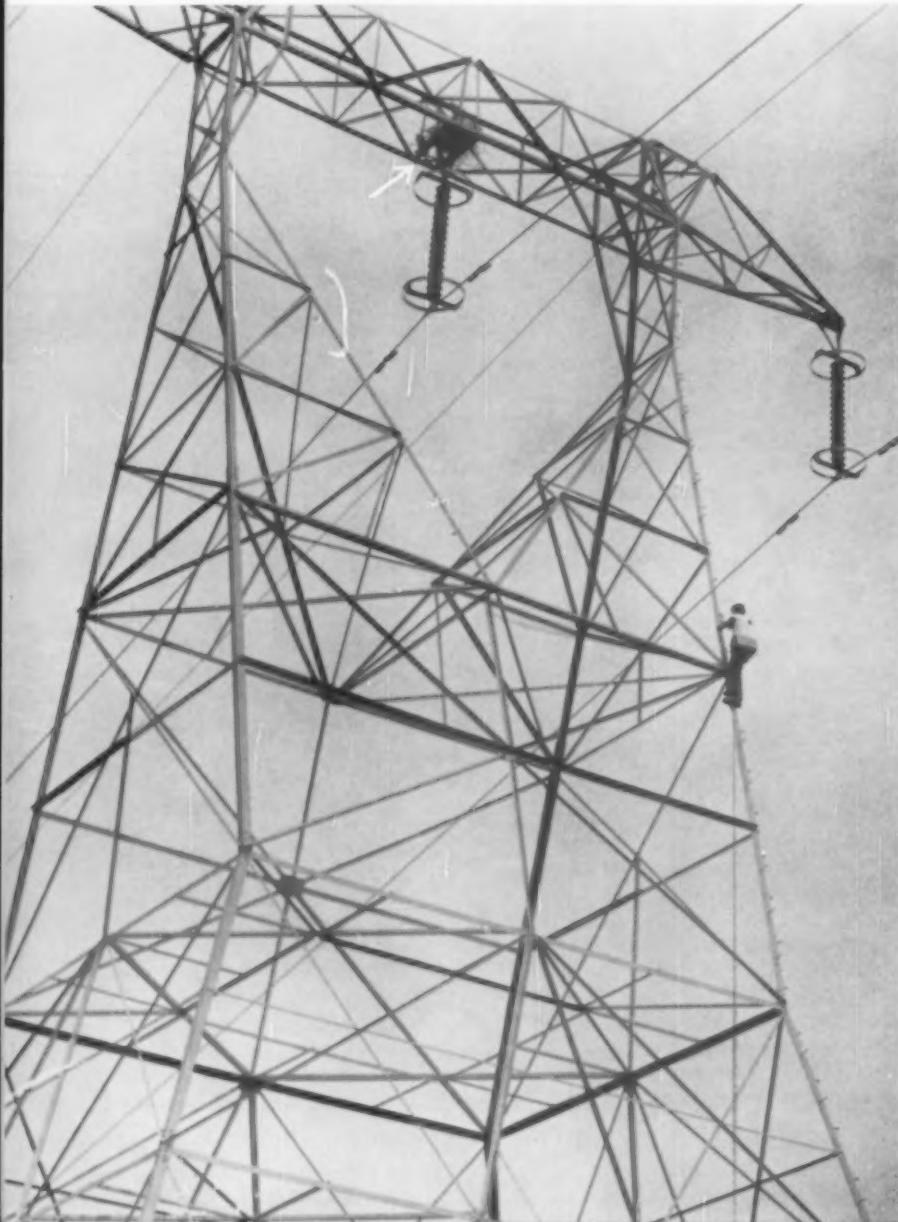
A pair of eastern red-tailed hawks show their adaptability by nesting on a man-made structure.

The arrow points to the nest of the red-tailed hawks on the superstructure. The author (right) climbing the 120-foot high tower.

By Leonard Lee Rue, III

EARLY in June, 1956, I was seated on a tussock out in a swamp in New Jersey, photographing turtles. The only other person in the entire area was a farmer who was plowing a field nearby. After a short time, his curiosity aroused, he came as close as possible and shouting, inquired as to what I was doing. Upon being told, he expressed interest in my camera equipment. I showed him what was taking place, and how I was going about it.

We fell to talking about wildlife, and he asked if I had taken pictures of the "eagles" nesting "up the road." Although we often see three or four bald eagles around each winter, I didn't realize that there were any nesting in the area. I immediately found out where the nest was and headed for the place. When I got there, I was astonished to see that the nest was on top of a tower carrying electrified high-tension lines. I would have expected to find ospreys nesting on top of this open



Unusual Choice of Nest-Site?

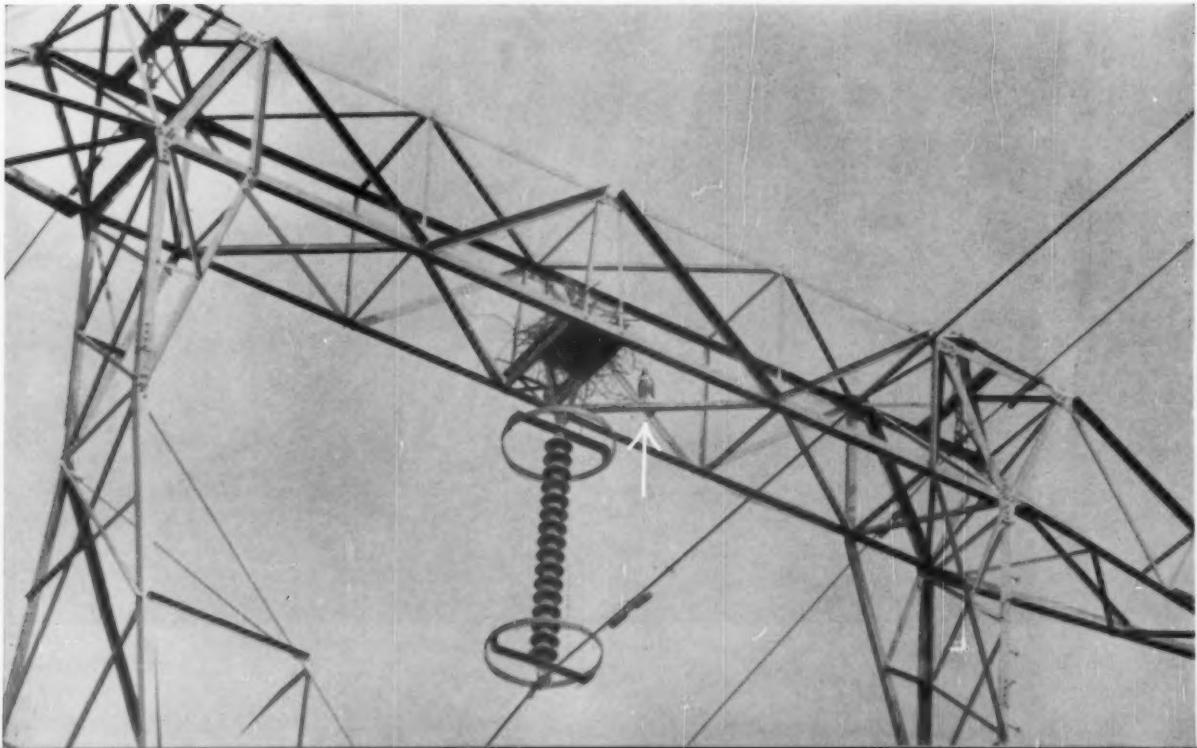
The author's experience with a pair of red-tailed hawks nesting on the steel tower of a high-tension line is certainly unusual. We can find no previous record of an eastern red-tailed hawk doing so. If some of our readers know of other records for red-tailed hawks nesting on steel towers, poles, or any other man-made structures, we shall appreciate hearing about it.—THE EDITOR



The young hawks in the "threat posture" as the author moves near them.

All photographs by the author.

The arrow points to one of the young hawks which has just left the nest.





tower, as they often nest on such sites, but I was in for a real surprise. As I drove up, instead of ospreys, I saw a pair of red-tailed hawks fly off the nest!

I was hesitant about going up the top of the tower, but the prospect of obtaining more nature pictures was all the stimulus that was needed. In this first, as well as all the later climbs, I depended heavily upon good non-slip type shoes for climbing, and a safety belt to use when I got to the top, for protection. Thus prepared, I soon climbed the 120 feet to the top. The nest was bulky, about three feet across and was composed of dead sticks, and roots, and lined with red cedar bark. There were three young hawks in the nest about two-thirds grown.

Meanwhile, the parent birds were circling about uttering their piercing, shrill calls. I began taking photographs of the young when I heard a hawk approaching. I am partially deaf, but the noise of the wind rushing by the body of one of the adult birds was enough to make me look up. Leveling off after coming out of a high dive, the bird was headed straight for me. Its wings were folded close to its body and the bird looked very much like a football as it hurtled at me. When the hawk saw me turn and look at it, it altered its course so that it passed about four feet over my head. As it spread its wings to start its upward glide, each feather went zzzzzzzzz! Both birds "stooped" at me many times in this and subsequent climbs, but though I often felt the breeze of their passing, they always just missed me. Each dive was always made from the rear and if I turned to watch them, the hawks would veer off. After the first dive, it got to be quite a thrill and the hawks seemed to get as much enjoyment out of it as I did.

That the red-tailed hawks were fulfilling their niche in nature, as a check, or partial control of the gray squirrel population, was in evidence each time I visited the nest. There were always fresh squirrel carcasses in the nest for the young hawks to feed upon. Yet, gray squirrels were to be seen along the road approach-

ing the tower at almost any time, giving ample evidence of little reduction in their numbers by these predators. The red-tailed hawk has been seen diving right into the squirrel's leaf nest in an effort either to flush its prey, or to catch one within the nest itself.

As my spare time was very limited, most of my photography was done on my day off, at noon, and during the evenings. Wishing to get photographs of the adult birds, I fastened my 4 x 5 Speed Graphic to the top of the tower and ran an electric cord from the solenoid and battery case to the ground. I did this one evening about 5:30 p.m., figuring that I could easily obtain the photographs I wanted as the adults came in to roost at night. Covering myself on the ground with a camouflage poncho, I lay directly under the tower. At 8:30 it was rapidly getting dark and the adults still hadn't flown in. So, I flashed the bulb taking a picture of the young bedded down for the night. As I started up the tower, the parent birds came flying up from the big oak trees in a woodlot about one-quarter of a mile away. I found out then, and sub-

stantiated it later, that the adults didn't roost with the young when they were too large to brood. They preferred the protection of the forest to the exposed framework of the tower when they settled to sleep.

One incident that occurred while I lay under the tower is worth relating. I was lying under a poncho and had just a little space left open for my eyes. Suddenly, a yellowthroat attempted to fly in the hole and landed on my face. Both the bird and I got quite a surprise!

It was gratifying to see the increased vigor in the young hawks on each succeeding visit I paid them. I was fearful lest the power-line crew dislodge the nest or some misguided human use the sitting hawks for target practice. At last, however, their wings were strong enough and the young birds ventured forth to their rendezvous with the sky. I saw the last one soar forth.

Sitting on the top of the tower surveying the earth below, it was easy to feel akin to the hawks and eagles and to realize why they are such fierce symbols of grace and freedom.

—THE END

One of the author's photographs of the young hawks on his first visit to the nest.



Young red-tailed hawk about five days before it took flight.

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Attracting Birds



Our Friendly Tree Swallows

By Myrtle Jeanne Broley

NOTHING in our years of bird study has given us as much pleasure as our friendly tree swallows. During the summer we live in a cottage at one end of a rocky island in Lower Beverly Lake—one of the lakes that forms the Rideau chain in southeastern Ontario, Canada. It is an ideal spot for these graceful, swift-flying little creatures since they love to flit back and forth over the blue water in their pursuit of the insects on which they feed.

The tree swallow is sometimes called the white-breasted swallow and indeed the immaculate white of the breast and lower parts does throw into relief the beautiful steel-blue of the back and head and the dark wings of this handsome bird. The color of the head seems darker over the jet black eyes, giving a somewhat masked look to its face, which is particularly noticeable when one is near the bird.

Though only about six inches long, the tree swallow is a hardy bird. It reaches our northern lakes in March, and the nesting site is chosen and defended at once. We have had tree swallows in our nest-boxes when the lake was still covered with ice and the winds were very cold. Occasionally a severe snowstorm blankets the area and the tree swallows then have a hard time finding enough to eat, or a shelter. On such days our wide veranda will be a haven for hundreds of them, so chilled that they pay little attention to us as we come or go among them.

At first we had only a few nesting boxes for these birds. Usually, we did not arrive at the cottage until the young were almost ready to leave the nest. When we began arriving in early May, we found that more homes were needed, and each year we put up a few more

until now there are about 50 nesting boxes around our place. All are occupied by tree swallows.

In autumn we take down the boxes and clean and repair them. We repaint them, too, and then we either hang them up, ready for spring or, in the case of a special few, which we like to keep near the house for our tamer pairs, we may store them away until our return there the following May.

One day in late May I was shaking my dust mop at the back door. A white feather which I had picked up with it blew off. At once a swallow sped after this treasure, and flew with it to her nesting box. A clamoring flock of tree swallows followed behind her. We were so amused at this that we hurriedly ripped open a feather pillow and got out more white feathers. It was surprising the way our little colony chased the flying bits of fluff. They were not interested in colored feathers, though, and sought only the white ones.

I noticed that a little female tree swallow, whose box was on a tree near the woodshed (into which we went very frequently), came quite close to me to retrieve feathers. Indeed I was sure she had begun to wait for me each morning around 10 o'clock, the time when I usually tossed out building material to them. There she'd be looking out from the entrance hole or sunning herself at the side of her box. After a very chilly night I went out the back door at the usual hour but instead of walking on to toss the feathers into the air, I held one up near the low roof which screened me fairly well, with just my hand and the feather showing. The female tree swallow flew back and forth over my hand, then swooped down to take the feather, which she carried to her nesting box. She took two more feathers from my hands that morning and soon

she would fly to meet me to receive the offering. Others circled about, and soon there were several brave enough to pluck the lightly held plumes from our fingers.

It became a diversion for us and our friends to proffer these to the swallows. We tied some on a string and were amused at the way the birds struggled to get them. Of course, we did not let them try too long but fixed the feathers in between the strings so that they could get them easily.

Meanwhile I had been working with my friendliest bird. She had growing young in her nest, which she and her mate fed assiduously. She had grown used to me standing by her box while she went in and out. Then I put my fingers around the one-and-a-half-inch opening and after a little hesitation she rushed in with her load of insects.

After awhile I put my fingers half over the entrance hole. This would make it necessary for her to push at my fingers to get in, and I was astonished that she did. She would even sit on my thumbs to rest before forcing her way past my hand into the nest-box. Soon both adult birds were going in and out as if my fingers were part of the box. They allowed my husband and daughter to act as bars or perches also.

Noticing that the parents were carrying dragonflies to their hungry brood we caught some and offered them, still alive, of course, to the female. She took them and fed them to the young, and the male grew bold enough to take them also. Flies that we offered them would usually be eaten at once by the adult birds, and I fed them to the birds later, while incubation was in progress. The female would just lean her head out of the box, take my offering and eat it at once. The male usually came out of the nest and sat on his perch.

The next spring we arrived at the cottage after most of our tree swallows had arrived. A few kept coming in, though, and one morning I said to my husband, "You know, all the boxes are filled but not one of the birds acts like my friendly pair of last summer."

We do not band the birds. To do so it is necessary to catch them in a net as they leave the nesting box and we found this made them nervous and unfriendly. At places where birds go into a live-trap after food, and are banded and released, they will often return to the trap again and again. Netting them just isn't the same. As we wanted our birds to be tame and fearless of us, we left the banding to people who went into areas away from their homes to do so.

The second day after we had arrived at our summer cottage was wonderfully mild and sunny. We were seated on the veranda when suddenly a tree swallow winged in over the lake and settled on

the railing near us. He caroled his rippling little song, then flew over and sat on my husband's shoulder.

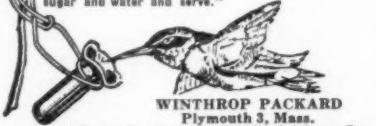
"That must be Tamey," I said (this was the name we had given our cooperative little male), "and we haven't a box for him."

"There's one I have just put together," my husband said. "It isn't painted but I guess he won't mind that." He hurried off to get it. When he came back with it in his hands, the swallow flew over and settled on the perch as if he knew this was for him. I took the box while Charlie went for his camera. Tamey, for it was indeed he, looked in the nesting hole, hopped to the top, went back to the perch and then, while I still held the box went right inside to examine it. When Tamey came out, we hung the box in place on a post near the veranda, and he went in and out of it several times before flying off. Very soon he returned with a little mate and

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The author with "Tamey," a wild tree swallow. Photograph by Charles Broley.

the two took over the house. Whenever we went near the post on which the box hung, one of this pair of swallows would settle on our hands or our arms, as if they knew that this was the one repayment (for providing them with a home), that we most desired. They would sit on my husband's head for minutes at a time.

Tamey took flies from us at once, but the little female was shyer. We offered them other insects, too. They ate some, and others they took from us, then flew out over the lake, and dropped them into the water. The caterpillars of the tent moth Tamey did not like, and it amused us to give them to him and see him fly out over the water and drop them. He would grab them well in the center, and drop them from quite a height. One of the other tame swallows grasped them just by the tip as if it did not care to handle them at all.

All of our swallows swarm about us when we toss up, or hold out, white feathers. It is fun to toss some of these on the water when it is still. The birds swoop for them so swiftly, yet never collide or bump each other. It is true there are often fights when a feather is being taken to the nesting box — other birds endeavor to rob the proud possessor of the feather until the feather is pushed or carried through the entrance hole.

Sometimes my husband will offer a really large white feather and watch the commotion that the swallows make over it. It will be too large to go through the small nest-box entrance hole easily, and the swallow has to work

it around until it finally gets it into the best position. Of course, all this time the other tree swallows are trying to gain possession of the feather. We stuck one of these plumes firmly into the ground and were amazed at the way the birds, often three and four at once, worked to pull it out.

One very chilly morning I broke up the white shell of an egg and tossed it outside. Later on I glanced out and saw several of our tree swallows busily picking up bits of the shell and eating them. I called my husband who was as surprised as I. He got more shells and ground them finer so that the birds could pick them up more easily. We did not know at that time that purple martins will also eat eggshells.

After the brood leaves the nesting box, it does not return to it. The young are able to fly well at once and to catch their own food. Some bird books say that a second brood is raised, but we have not seen this happen in our group. Of course, if something goes wrong with the first clutch of eggs, the bird will lay again.

In late summer and early fall, tree swallows gather in thousands and sit on fence wires, trees, and bushes, or skim over our meadows and fields. When colder weather arrives they migrate south, still in these large flocks. On a chilly morning we often see the roof of our guest house, which is out on a lake point, covered with the little creatures and we realize they are taking a last look around before heading south.

—THE END

Help for Tree Swallows

Several hundred tree swallows were killed last summer by cars on the causeway across the new reservoir (De Forest Lake) in Rockland County only 30 miles from New York City. One person picked up 129 dead birds one day on the half-mile of road.

Some say that the swallows, flying low over the water, rose slightly to cross the causeway and hit or were hit by automobiles. Others report that many birds sat on the road, or dipped down from telephone wires in front of cars.

The Rockland Audubon Society is anxious to avert repetition of this slaughter next summer and thereafter. It believes that the water company which owns the reservoir would cooperate, but does not know what safety measures to propose.

If any readers of *Audubon Magazine* know how a similar problem was solved elsewhere, we wish they would write and tell us.

JOHN M. PRICE
New City, Rockland Co., N. Y.

COMMENT

A member of our staff has suggested that the installation of a high wire fence (which is usually built around the edge of a reservoir to prevent people from throwing things into the water) might influence the swallows to fly high enough above the causeway to clear the tops of automobiles, and thus avert some casualties. Whether or not this would prevent swallows from alighting on the highway, where they are struck also, is doubtful. Perhaps an *enforced*, reduced speed limit over the causeway, might save the lives of many of the swallows; whether they are birds that are flying low across the causeway road, or those that have alighted on it.—The Editor

Albino House Sparrows

Last year for over five months we had a white English, or house, sparrow that came to our feeding dish with a flock of the normally-colored brown ones. Then we discovered that there were two albino sparrows, as they came to the dish at the same time although apparently in different flocks. They came several times a day. Both of them had dark eyes and were like the other birds in every day but were quicker to fly away at the slightest noise. One came back again in March 1957 several times but now seems to be gone. They were here until about Christmas in 1956.

MRS. W. R. JACKSON
Pasadena, California

**A Reply to
"Corrections to Nova Scotia Article"**

In the letters column of the January-February 1957 issue of *Audubon Magazine* is an exchange of correspondence between Marjorie Camp and Barbara Joy, of Bar Harbor, Maine, and Dr. H. F. Lewis, of West Middle Sable, Nova Scotia, wherein I am cited as contributing apparently inaccurate information, or advice, used in Dr. Lewis's article, "Adventures for Bird-Watchers in Nova Scotia," (*Audubon Magazine*, January-February 1956 issue).

The point made is this: that I told Dr. Lewis that Breton Cove was the best point of departure from the Cape Breton mainland, to reach Bird Islands. Miss Camp and Miss Joy say they were "greatly intrigued" with the advice Dr. Lewis gave in this connection which proved to be inaccurate. In self-defense Dr. Lewis explained that he had "relied" on me for its accuracy. When preparing his article, "Adventures for Bird-Watchers in Nova Scotia," Dr. Lewis incidentally relied on me for considerable data that I was pleased to be able to provide, and I am sorry that my advice regarding the best way to reach Bird Islands was, allegedly, found to be erroneous. The fact is that some years ago, when making my first trip to these interesting islands,

Continued on Page 190

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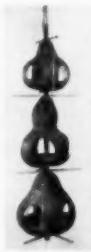
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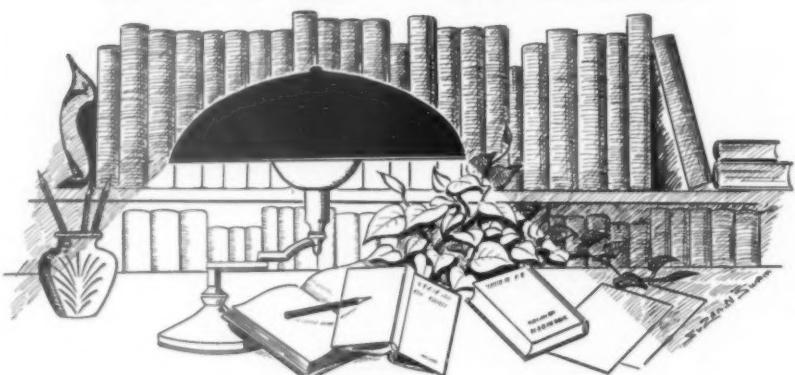
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BOOK NOTES



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John D. Rockefeller, Jr.**

Text by Nancy Newhall, Prologue by Fairfield Osborn, Epilogue by Horace Marden Albright, Alfred A. Knopf, New York, 1957. 12½ x 9 in., 179 pp., Illustrated. Boxed \$13.50.

The goal of any foreigner coming to visit this—to him—strange as well as beautiful country is almost certain to include seeing some of the treasures to be found in our museums, monuments, and national parks. In New York City, he will not miss the Cloisters and the Palisades. Even if he is in the United States only a short time, he will no doubt go to visit that outstanding achievement in restoration, Colonial Williamsburg. Perhaps he will have a glimpse of the unforgettable Shenandoah and Great Smoky Mountains. On a more extended trip he will probably see the Grand Canyon, Yellowstone, Yosemite, and possibly the Redwoods, the Mesa Verde, and the Grand Tetons, and he might very well return to Europe by way of the Virgin Islands. And in all of these places he will see the work, whether or not he hears the name, of John D. Rockefeller, Jr. From the time he was very young, this generous man has had a special feeling for the heritage of his land and a vision of the necessity to preserve it. His attitude has always been that great wealth should be used not for personal enjoyment but for the benefit of his fellow countrymen—an attitude which, though unique in the history of the world, has become a symbol of the "American way." It is entirely fitting that there should be a record of the sites of natural, historical, or artistic interest which have been set aside through his generosity; and it is equally fitting that the record should appear in a volume in every way so outstanding. The text, the

printing, the design, and above all the numerous photographs, in color and in black and white, are superb.

CREATIVE CRAFTS FOR CAMPERS

By Catherine T. Hammett and Carol M. Horrocks, Association Press, New York, 1957. 8¾ x 5¾ in., 431 pp. Illustrated. Indexed. \$7.95.

Here are many suggestions, some of which are detailed, step-by-step techniques for arts and crafts. Of special interest are the chapters on sketching and painting, on photography, and especially on nature, which give instructions on various ways of making prints of leaves, grasses, etc., on weather station equipment, and the construction of dioramas, among other things. The senior author is past president of the American Camping Association and currently director of Camping Caravan, the program department of Girl Scouts of the U. S. A.

**THE COMPARATIVE BIOLOGY OF THE
MEADOWLARKS (STURNELLA)
IN WISCONSIN**

By Wesley E. Lanyon, Nuttall Ornithological Club Publications #1, Cambridge, Massachusetts, 1957. 8¾ x 5⅓ in., 67 pp. Illustrated.

Ever since Audubon remarked that there were meadowlarks west of the Mississippi River which were similar in appearance but whose voices were different from the eastern birds, there has been a controversy on this subject among ornithologists. This book is the result of a four-year study of the eastern and western meadowlarks in an overlap breeding zone near Madison, Wisconsin. Various chapters cover the ecological aspects of distribution, an analysis of the development of song territory, behavior, and the question of interbreeding.

BUTTERFLIES AND MOTHS

By Alfred Werner, Random House, New York, 1956. 12 x 9½ in., 175 pp. Indexed. \$10.00.

While this is not a scientific work, it is certainly one of the most beautiful volumes to be published in a long time. Printed in Germany, the 36 plates are works of art not only in the exquisite fidelity with which the color and texture of the butterflies and moths have been reproduced, but also for the taste with which they have been arranged. Most of the 150 spectacular Lepidoptera shown are from the Tropics. An introduction supplies some general information on these, briefly describing their habits when known and giving their geographical distribution, which is also indicated graphically by an ingenious end-paper map.

BUTTERFLIES OF THE INDIAN REGION

By M. A. Wynter-Blyth, Bombay Natural History Society, 1957. 10½ x 7 in., 523 pp. Illustrated. Indexed. 28 rupees (about \$7.00).

This reference work will be of great interest to anyone concerned with butterflies. It can be used for identification through keys, descriptions, and the excellent plates, of which 27 are colored. It also gives information concerning range, status, habitat, habits, food of the caterpillars, enemies, ecology, etc., and both common and scientific names.

ARCTIC BIRDS OF CANADA

By L. L. Snyder, University of Toronto Press, 1957. 9½ x 6 in., 310 pp. Illustrated. Indexed. \$4.75.

This book covers 72 species of birds that occur in the extreme north of Canada. The "arctic region" boundary has been arbitrarily fixed at the line of a treeless limit running roughly from the Beaufort Sea border between Alaska and the Yukon Territory to Eskimo Point on Hudson Bay, across that bay to Portland Promontory, and thence to

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A NATURALIST IN PALESTINE

By Victor Howells, *Philosophical Library*, New York, 1957. 8½ x 5½ in., 180 pp. Illustrated. Indexed. \$6.00.

This entertaining book is the result of nine months of wandering through a region that has since been divided into the states of Israel and Jordan. From the Negeb Desert in the south to the Huleh swamps in the north, the author records his observations of insects, mammals, reptiles, flowers, fishes, and landscapes. Also, he recounts some tales of Arabs and gives information on their feasts and rituals.

MUSHROOMS, RUSSIA AND HISTORY

By Valentina Pavlova and R. Gordon Wasson, *Pantheon Books*, New York, 1957. 2 vols. boxed, 13 x 9¾ in., 433 pp. Illustrated. Indexed. \$125.00.

This superb set of volumes is a collector's item. The edition has been limited to 512 copies, manufactured in Italy with the utmost care. Paper, printing, design, and illustrations are all of the finest quality. For 30 years Mr. Wasson, (a long-time member of the Board of Directors of the National Audubon Society) and his wife, have been ardent mycologists. They have not only hunted mushrooms in various parts of the world but have also done extensive research into the history, folklore, and uses of mushrooms in many countries, their place in art and literature, and even in religious ritual. Along the way they have uncovered many odd facts, among which the strangest is the hallucinatory effect which certain mushrooms have upon those who eat them.

PROSPERITY BEYOND TOMORROW

By Samuel H. Ordway, Jr., *Ronald Press*, New York, 1956. 8½ x 5½ in., 208 pp. Indexed. \$3.00.

While Mr. Ordway is, in general, optimistic about the future, he regards the imminent rapid increase in the amount of leisure time as crucial. In this book he develops the idea of "an ethic for the age of leisure" which would have conservation, considered as a search for harmony between man and natural life forces, as its central concept. He suggests that the search for ethical values and a religious faith might reach their goal in an Age of Leisure which would also be an Age of Conservation.

PLANTS OF THE BIBLE

By A. W. Anderson, *Philosophical Library*, New York, 1957. 10 x 7½ in., 72 pp. Illustrated. \$6.00.

This charming book will give pleasure to the general reader as well as to the flower lover. Twenty-four of the trees, shrubs, and flowers of the Bible are arranged alphabetically. For each, a few quotations from the Bible serve as a prelude to a short text giving the history of the plant in ancient times, its uses, and the folklore connected with it. The 12 colored plates are excellent reproductions from the works of Re-douté, Bauer, and others.

JUNIOR BOOKS

By Amy Clampitt

Asst. Librarian, Audubon House

SPINNING WINGS (8-12)

By Lucy Gallup, *William Morrow*, New York, 1956. 8½ x 6½ in., 95 pp. Illustrated. \$2.50.

Suspense and an object lesson in natural history are combined with great effectiveness in this story of a family of black terns and some children on a vacation who accidentally discover their nest. The children are very real and so are the birds; but the book's special distinction, quite apart from ornithological correctness, is the strong feeling it communicates of indignation against human wantonness and cruelty. Such genuine moral feeling—which is not at all the same thing as mere preaching—is rather a rare thing in books for children; and it is because it is genuine that the reader finds himself really caring about what finally happens to the terns. This is an exceptional accomplishment in fiction of any kind, but next to unheard-of in the natural history category.

PELICAN IN THE WILDERNESS

By F. Fraser Darling, *Random House*, New York, 1956. 9¾ x 5¾ in., 380 pp. Illustrated. Indexed. \$5.00.

The author of many books on wildlife, natural history, and agriculture in Great Britain, Senior Lecturer in Ecology and Conservation at the University of Edinburgh, Mr. Darling has traveled widely in the United States, Alaska, and Mexico. In this highly personal book he recounts his odysseys, his observations, and his conversations with naturalists, government officials, farmers, and many others. The numerous illustrations are from photographs which vividly reflect the varied concerns of an ecologist.

THE WONDERS OF SEEDS (10-14)

By Alfred Stefferud, *Harcourt, Brace & Company*, New York, 1956. 8¾ x 5 in., 191 pp. Illustrated. Indexed. \$2.75.

A fascinating first chapter on some seeds of a Manchurian lotus, which germinated after a thousand years and are now blooming in Washington, opens this graphic and agreeably written introduction to botany. The author suggests a number of simple experiments his readers can try, and there is information on the recent work by George Shull with hybrid corn and Frank Cuthbertson with beets and sweet peas, among others, along with a brief account of the discoveries of Gregor Mendel. The physical production of the book, with attractive drawings by Shirley Briggs and a page layout which combines lightness and dignity in a manner quite unusual for books at this level, is deserving of mention.

THE OPEN SEA: ITS NATURAL HISTORY: THE WORLD OF PLANKTON

By Alister C. Hardy, *Houghton Mifflin Company*, Boston, Mass., 1956. 8¾ x 6 in., 335 pp. Illustrated. Indexed. \$6.50.

This American edition of one of the excellent British "New Naturalist" series is to be followed by a volume on vertebrates and other sea animals. Here the author deals, in a manner intended for the serious student as well as for the inquiring amateur, with the movement of the waters and with plankton, squids, cuttlefish, and such lower forms of sea life. Of particular interest are the chapters on the vertical migration of plankton, on life in the great depths, and on phosphorescence. The numerous illustrations, including color plates, photographs, and drawings, give beauty and attractiveness to an already intriguing subject.

JOHN MUIR: PROTECTOR OF THE WILDS (8-12)

By Madge Haines and Leslie Morrill, *Abingdon Press*, Nashville, 1957. 8½ x 5¾ in., 128 pp. Illustrated. \$1.50.

JOHN MUIR: FATHER OF OUR NATIONAL PARKS (12 and up)

By Charles Norman, *Julian Messner*, New York, 1957. 8½ x 5½ in., 191 pp. Indexed. \$2.95.

The career of John Muir, with its wanderings, its repeated narrow escapes, and its endless thirst for wilderness and solitude, as well as the crusade to preserve Yosemite with which his name is first of all associated, was already half a legend even in his lifetime. Any account of it is bound to be absorbing, and here are two biographies which supplement each other nicely. With

younger readers in mind, Miss Haines and Mr. Morrill have devoted proportionately larger attention to Muir's boyhood in Scotland and in Wisconsin. Mr. Norman's more detailed account concentrates mainly on his adult life, with such entertaining sidelights as Muir's meeting with Emerson, his rather crotchety friendship with John Burroughs, and the final journey which took him by way of South America to Africa, where he had, he said, "a rendezvous with a baobab tree." Mr. Norman has produced a lively book, limiting himself to conversations actually recorded and quoting liberally from Muir's own writings.

WATER FOR AMERICA (12 and up)

By Edward H. Graham and William R. Van Dersal, Oxford University Press, New York, 1956. 9 1/4 x 6 1/2 in., 111 pp. Illustrated. \$3.50. (Stories of conservation series.)

Just about every conceivable aspect of what water is, what it does, and how it can be conserved, receives compact and straightforward treatment in this new book by two noted conservationists. The general plan is the same one that was so effective in their previous books for young readers, "The Land Renewed" and "Wildlife for America": a page-long unit of text on the right hand, faced by a full-page photographic illustration on the left. The pictures are well chosen and well reproduced, and the entire volume is, if anything, an improvement on its predecessors in the amount of solid information it contains.

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LETTERS—*Continued from Page 185*

I enquired along the coast near by, as to the best means of getting there, whereupon I was advised to proceed to Breton Cove. On that occasion, as on three subsequent visits, I applied at the breakwater there for transportation and experienced no difficulty in finding a boatman who seemed glad to make the trip and for a fee that seemed most reasonable. This will explain why I included this bit of information in my letter to Dr. Lewis who, incidentally, has never been to Bird Islands.

When reading the above cited letter from Miss Camp and Miss Joy, which dwelt so largely on the hardships and disappointments they experienced while in Nova Scotia, I was somewhat "intrigued" with their admission that (1) they accepted the guidance of a 12-year-old lad to find the cormorant colony near Antigonish, instead of turning in at "Crystal Cliffs," as Dr. Lewis's article told readers to do, when they admittedly came to the road sign; (2) at Breton Cove they sought information from some woman in a store, instead of proceeding to the breakwater there where the boats come in; and (3) as bird-watchers, intent upon seeing nesting colonies of seabirds, they would expect to find them about their nesting rookeries so late in the season as the latter part of August.

I hope they found Dr. Lewis's article helpful in other respects. Mr. Ahle whom they mention, has only recently

Raven's Nest in Pennsylvania

I read with interest the article, "Is the Raven Coming Back in the Southeast?" by Alexander Sprunt, Jr., in the July-August 1956 issue of *Audubon Magazine*.

This past year I found a raven nest here in Cumberland County, which is discernible in the center of the photo-

BIRD'S-EYE VIEW—

Continued from Page 153

mous pair of boots liberally larded with a *revolting* preservative and brought to notice if necessary by some such comment: "Go anywhere

become established at Big Bras d'Or. He has already indicated to the Nova Scotia Bird Society that he is deeply interested in these bird colonies and that he is now equipped with a proper boat to take tourists and others to the islands. This was not the case, heretofore.

Robie W. Tufts, President
Nova Scotia Bird Society
Wolfville, Nova Scotia

Wants More Bird Articles

It would be difficult to find anything to criticize in *Audubon Magazine*, except perhaps that it is not long enough and does not appear often enough. Your writers are of a high calibre and your articles are always of interest. The one comment I want to make is that since I am somewhat of a specialist, please, Mr. Editor, more and more and still more birds.

Mrs. Naomi LeVay
Toronto 7, Ontario, Canada

Audubon Magazine is so good, I can hardly wait for the next copy.

Mrs. Margaret Uptegrove
Short Hills, New Jersey

graph, just above the white droppings of the young ravens on the face of the rock. Five young were successfully raised in this nest. While quite rare, the eastern raven seems to be making somewhat of a comeback in this section likewise.

FRANK E. MASLAND, JR.
Carlisle, Pennsylvania



Raven's nest (see arrow) in Cumberland County, Pennsylvania, photographed by Frank E. Masland, Jr.

in these, y'know; the gear they sell today is no good in brambles." An old Wodehousian gambit may also be used by experienced performers; "Useful for snakes."

Now we come to the vital question of optical aids, and the birdsmen may have to show considerable skill if he is to take a trick here. Three usual situations present themselves.

(1) You have an old and battered pair, and your chief potential rival has a large, new pair of binoculars. Attack is the best defense in this situation, with the opening line: "Nice little toy you've got there; but can you *see* with them?" Then, for you have picked the moment carefully, you flick your ancient pair to your eyes and say: "Gosh, that juvenile foxed me for a second: I thought it was a female. Oh, sorry, didn't you get on them in time?" Your rival, who is still unlimbering his pair, is thus caught at a disadvantage and not only feels that he is guilty of ostentation in the eyes of the rest of the party, but that he has probably wasted \$160.

Your advantage can be rammed home later in the day if he lags behind at any point, by suggesting that the weight of the glasses is holding him back.

(2) Reversed position to (1): You have the new pair, and your rival has an old pair. This needs greater aplomb to carry off, and the recommended line is to wave them about merrily, saying, "Well, there's my wife's winter coat, and our summer vacation, but I simply had to have them—one owes it to the birds, if you see what I mean." Carry on in this vein, prattling ingenuously about their illumination, and periodically offer to lend them to your rival just as he has focused on some object of interest. Under no circumstances should you ever admit that your wife forced you to give up cigarettes before she would consent to the purchase.

(3) You both have large pairs of binoculars. There is nothing to do now but to go into a technical huddle, making much play, with exit-pupil diameters, field of vision at 1,000 yards, etc., and await your chance to gain advantage in another opening altogether. If the illumination of the image is better in his glass than yours, say that you were raised on the *Old Peterson* that put

Continued on Page 192

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Turn to next page

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BIRD'S-EYE VIEW—Continued from Page 190

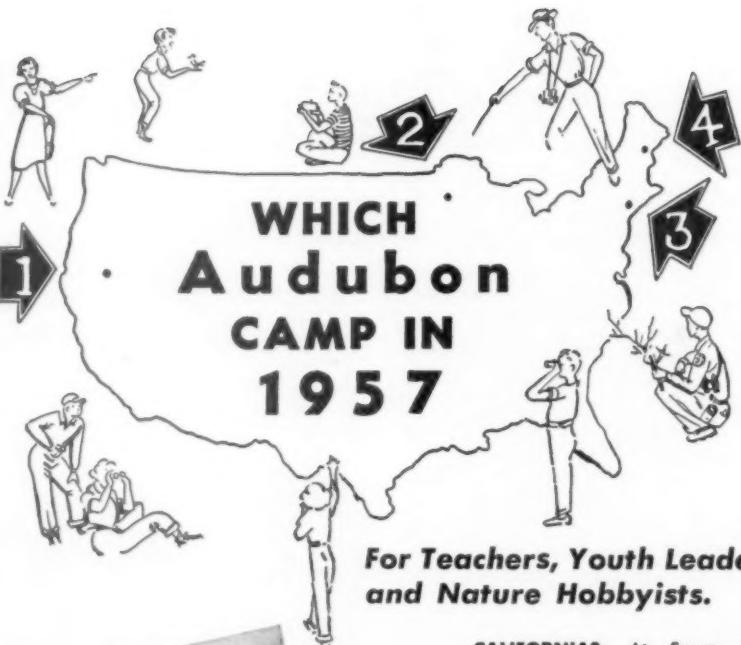
little identification premium on color, and that you consider any investment in better binocular illumination a sheer waste of money for you. If your glass has the better illumination of the two, point out that you find it highly necessary for identification during the hour before dawn, and imply that he obviously tends to be still abed at such hours and occasions when the most interesting birding takes place.

The same general rules guide the birdsman in dealing with telescopes. If he doesn't use one, he should say loftily, "After all, they're not much good for passerines," thus implying that he has only come on this particular wader-watching expedition as light recreation, and then, as soon as his rival has got esconced with his Balscope, stage a diversion some way off to look at a grasshopper sparrow.

But if he is a telescope or Balscope man, then the utmost must be made of thumbsticks, straps, turret-heads, and other gadgets, and the whole party must be held up while he converts himself into a sort of cocoon on the ground for at least a quarter of an hour. This is especially effective if the wind is cold and the rival is at all lightly clad.

(Note: Extra points may be gained by using the abbreviations "binos," "binocs," or "scopes"; and by using slang for the names of manufacturers.)

This discussion of "Birdsmanship" will be concluded in the next issue of Audubon Magazine.



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